

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.05.95  
Test oil : ISO 4113

Combination No. : 0 402 648 799

Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0 412 628 885

Governor  
Governor design. : RQ300/1050PA1030-28  
Governor no. : 0 421 801 778

Cust. part No. : 0260744102

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

A01

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.94  
Tolerance mm : + 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.84  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 732  
guide sleeve  
travel mm : 6.13  
Tolerance mm : + 0.10

Rated speed rpm : 426  
guide sleeve  
travel mm : 4.29  
Tolerance mm : + 0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 828  
guide sleeve  
travel mm : 6.38  
Tolerance mm : + 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm3/1000 strokes : 239.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 13.30  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75

Rated speed rpm : 1350

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#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.20

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#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 850  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

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#### START CUT-OUT

Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

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#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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#### BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 24.0

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LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 928S

Injection pump  
Pump designation : PE8P120A320LS7847...  
EP type number : 0 412 628 879

Governor  
Governor design. : RQ300/1050PA1030  
Governor no. : 0 421 801 640

Cust. part No. : 0230741202

Customer spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power kW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

A05

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1175

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.20

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 12.90  
Tolerance mm : + 0.10

Rated speed rpm : 950  
rack travel mm : 13.05  
Tolerance mm : + 0.10

Rated speed rpm : 775  
rack travel mm : 13.55  
Tolerance mm : + 0.10

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

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LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 929S  
  
Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number :  
  
Governor  
Governor design. : RQV300...950PA1033  
: -12  
Governor no. :  
  
Cust. part No. : 0230741402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

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Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

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##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm : + 0.20

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.52  
Tolerance mm : + 0.15

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm : + 0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm : + 0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.48  
Tolerance mm : + 0.25

Rated speed rpm : 1100

guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

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##### GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 12.00  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.60  
Rated speed rpm : 375

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#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

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#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

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LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 930S

Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863

Governor  
Governor design. : RQ300/1050PA1031-2  
Governor no. : 0 421 801 645

Cust. part No. : 0230741502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0



Check tolerance  
cm3/1000S. : + 4.0

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Spread  
Tolerance  
cm3/1000 strokes : 6.0

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Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 239.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.20

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 12.90  
Tolerance mm : + 0.10

Rated speed rpm : 950  
rack travel mm : 13.05  
Tolerance mm : + 0.10

Rated speed rpm : 775  
rack travel mm : 13.60  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

---

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 931S

Injection pump  
Pump designation : PE8P12GA320LS7847-1  
EP type number : 0 412 628 879

Governor  
Governor design. : RQ300/950PA1032-1  
Governor no. : 0 421 801 646

Cust. part No. : 0230741302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.50

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

---

START CUT-OUT

Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 933S  
  
Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863

Governor  
Governor design. : RQ300/950PA1031-3  
Governor no. : 0 421 801 646

Cust. part No. : 0230742702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.50

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm : + 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 940S  
  
Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863  
  
Governor  
Governor design. : RQ300/950PA1032-4  
Governor no. : 0 421 801 661

Cust. part No. : 0240740602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Tolerance l/h : + 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

#### START CUT-OUT

Rated speed rpm : > 220  
Check  
speed 1/min : > 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 941S

Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863

Governor  
Governor design. : RQV300...950PA1033  
: -7  
Governor no. : 0 421 814 019

Cust. part No. : 0240742202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm : + 0.15

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.52  
Tolerance mm : + 0.15

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm : + 0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm : + 0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.48  
Tolerance mm : + 0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1050  
Rack travel in mm : 12.00  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

---

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 942S

Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863

Governor  
Governor design. : RQ300/950PA1031-6  
Governor no. : 0 421 801 662

Cust. part No. : 0240742302

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 13.25  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

---

START CUT-OUT

Rated speed rpm : > 220  
Check  
speed 1/min : > 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 945S  
  
Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863  
  
Governor  
Governor design. : RQ300/1050PA1030-6  
Governor no. : 0 421 801 666

Cust. part No. : 0230747802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075

B03

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.20

---

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 12.90  
Tolerance mm : + 0.10

Rated speed rpm : 950  
rack travel mm : 13.05  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 13.25  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 946S

Injection pump  
Pump designation : PE8P120A320LS7847  
EP type number : 0 412 628 863

Governor  
Governor design. : RQ300/1050PA1031-7  
Governor no. : 0 421 801 667

Cust. part No. : 0230747902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.10

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 12.90  
Tolerance mm : + 0.10

Rated speed rpm : 950  
rack travel mm : 13.05  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 13.25  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

---

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

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Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 947A

Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0 412 628 869

Governor  
Governor design. : RQ300/950PA1032-12  
Governor no. : 0 421 801 741

Cust. part No. : 0230749602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min : + 30

Rated speed rpm : 200

CRT mm min. : > 9.00

##### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm : + 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00

Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

#### START CUT-OUT

Rated speed rpm : > 220  
Check  
speed 1/min : > 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  19.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 947S  
  
Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0 412 628 869  
  
Governor  
Governor design. : RQ300/950PA1032-5  
Governor no. : 0 421 801 668

Cust. part No. : 0230749602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance L/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 8-7-2-6-3  
                  : -5-4-1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550  
  
Rack travel in mm : 15.00  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.04  
Tolerance mm : + 0.10

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.35  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 410  
guide sleeve  
travel mm : 4.66  
Tolerance mm : + 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1170

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure

hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1200

---

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 200  
CRT mm min. :  $>$  9.00

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

---

#### START CUT-OUT

Rated speed rpm :  $>$  220  
Check  
speed 1/min :  $>$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300

rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.12.94  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 955A  
  
Injection pump  
Pump designation : PE8P120A320LS7859  
EP type number : 0 412 628 869  
  
Governor  
Governor design. : RQ300/950PA1031-9  
Governor no. : 0 421 801 675

Cust. part No. : 0240740502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 1.0

Overflow quantity  
min. l/h : 75  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.16  
Tolerance mm : + 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.36  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.48  
Tolerance mm : + 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : + 4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.50

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  14.0

### LOW IDLE

Rated speed rpm : 300

rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 980  
  
Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855  
  
Governor  
Governor design. : RQV300...950PA797  
: -39  
Governor no. : 0 421 814 115  
  
Cust. part No. : 0250749102

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance L/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

B20

Test lines : 1 680 750 075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm : + 0.20

Rated speed rpm : 1010  
guide sleeve  
travel mm : 8.56  
Tolerance mm : + 0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm : + 0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23  
Tolerance mm : + 0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31

Tolerance mm : + 0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1030

Rack travel in mm : 14.20  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.50

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20

Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 981

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQ300/950PA971-10  
Governor no. : 0 421 801 754

Cust. part No. : 0250749002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : + 0.30

Check  
tolerance \*NW : + 0.75

## Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0



---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.25  
Tolerance mm : + 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.33  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 4.72  
Tolerance mm : + 0.10

Rated speed rpm : 580  
guide sleeve  
travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 102.0  
tolerance degree : + 4.0

rack travel mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1105  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

---

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 425  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.20

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 983

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQ300/950PA993-9  
Governor no. : 0 421 801 755

Cust. part No. : 0250749202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.14  
Tolerance mm : + 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.34  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.46  
Tolerance mm : + 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00

C01

Tolerance mm : + 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : + 4.0

rack travel mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.70

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 984  
  
Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855  
  
Governor  
Governor design. : RQ300/1050PA972-12  
Governor no. : 0 421 801 759

Cust. part No. : 0250749302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0



---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.94  
Tolerance mm : + 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.34  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 4.51  
Tolerance mm : + 0.10

Rated speed rpm : 570  
guide sleeve  
travel mm : 6.00

C05

Tolerance mm : + 0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : + 4.0

rack travel mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  8.20

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 985

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQ300/1050PA993-10  
Governor no. : 0 421 801 760

Cust. part No. : 0250749502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.85  
Tolerance mm : + 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.34  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 271  
guide sleeve  
travel mm : 1.33  
Tolerance mm : + 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : + 4.0

rack travel mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  5.50

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 986

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQV300...1050PA797  
: -40  
Governor no. : 0 421 814 118

Cust. part No. : 0250749402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 105  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1108  
guide sleeve  
travel mm : 8.54  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608  
guide sleeve  
travel mm : 5.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820

guide sleeve  
travel mm : 6.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1160

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.20  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  8.20

Rated speed rpm : 375

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.05.95  
Test oil : ISO 4113

Combination No. : 0 402 648 992

Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0 412 628 885

Governor  
Governor design. : RQV300...1050PA1033  
: -21  
Governor no. : 0 421 814 145

Cust. part No. : 0250747502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 170  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm : ± 0.20

Rated speed rpm : 1110  
guide sleeve  
travel mm : 8.58  
Tolerance mm : ± 0.15

Rated speed rpm : 558  
guide sleeve  
travel mm : 4.53  
Tolerance mm : ± 0.25

Rated speed rpm : 608  
guide sleeve  
travel mm : 5.03  
Tolerance mm : ± 0.25

Rated speed rpm : 820

guide sleeve  
travel mm : 6.13  
Tolerance mm : ± 0.25

Rated speed rpm : 1183  
guide sleeve  
travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1140

Rack travel in mm : 13.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

rack travel mm : 13.30  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

## Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.30

Rated speed rpm : 375

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 850  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.06.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 993  
  
Injection pump  
Pump designation : PE8P120A320LS7838  
: -10  
EP type number : 0 412 628 854  
  
Governor  
Governor design. : RQ300/950PA971-11  
Governor no. : 0 421 801 764

Cust. part No. : 0260740202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.72  
Tolerance mm : ± 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.34  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 451  
guide sleeve  
travel mm : 4.76  
Tolerance mm : ± 0.10

Rated speed rpm : 580

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : ± 4.0

rack travel mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1100  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 200

CRT mm min. :  $>$  9.00

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.15

#### START CUT-OUT

Rated speed rpm :  $>$  240  
Check  
speed 1/min :  $>$  260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 996

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQV300...950PA1199  
: -1  
Governor no. : 0 421 814 131

Cust. part No. : 0250749702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 75  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm : ± 0.20

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm : ± 0.15

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm : ± 0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23  
Tolerance mm : ± 0.25

Rated speed rpm : 780

guide sleeve  
travel mm : 6.31  
Tolerance mm : ± 0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1030

Rack travel in mm : 14.20  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 123.0  
tolerance degree : ± 4.0

rack travel mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 79.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  6.50

Rated speed rpm : 320

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.25  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.20

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.05.95  
Test oil : ISO 4113

Combination No. : 0 402 676 821

Injection pump  
Pump designation : PE6P120A320LS7854  
EP type number : 0 412 626 872

Governor  
Governor design. : RSV550...1050P0A826  
: -9  
Governor no. : 0 421 833 459

Cust. part No. : 0250746302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 441 LA  
Power KW : 239.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 3.90  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 88.0  
tolerance degree : + 4.0

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 550  
rack travel mm : 3.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 565  
Tolerance 1/min : + 20

Rated speed rpm : 450

CRT mm min. : > 8.50

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 970  
rack travel mm : 13.90  
Tolerance mm : + 0.10

Rated speed rpm : 750  
rack travel mm : 14.20  
Tolerance mm : + 0.10

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 550  
rack travel mm : 3.90  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.06.95  
Test oil : ISO 4113

Combination No. : 0 402 678 825

Injection pump  
Pump designation : PE8P120A320LS7823-2  
EP type number : 0 412 628 883

Governor  
Governor design. : RSV450...1050P0A541  
: -1  
Governor no. : 0 421 833 444

Cust. part No. : 0250744202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442LA  
Power KW : 362.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 14.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.60  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 90.0  
tolerance degree : + 4.0

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450  
rack travel mm : 4.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 475  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 14.90  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm : + 0.05

Rated speed rpm : 875  
rack travel mm : 15.35  
Tolerance mm : + 0.10

Rated speed rpm : 750  
rack travel mm : 15.50  
Tolerance mm : + 0.10

Rated speed rpm : 550  
rack travel mm : 15.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400  
Rated speed rpm : 500  
rack travel mm : 0.75  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500

Pressure hPa : 1600  
rack travel mm : 4.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 700  
rack travel mm : 3.55  
Tolerance mm :  $\pm 0.10$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 14.0$

---

LOW IDLE

Rated speed rpm : 450  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.95  
Test oil : ISO 4113

Combination No. : 0 402 744 801

Injection pump  
Pump designation : PES4P120A320RS7380  
EP type number : 0 412 724 802

Governor  
Governor design. : RQV275...1300PA1232K  
Governor no. : 0 421 815 469

Cust. part No. : CCEP 5149 66-237

## Customer-spec. information

Customer : RVI  
Motor : MIDR 04-02-26 B4  
Power kW : 110.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 95  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.60  
Tolerance mm : + 0.20

Del. quantity  
cm3/1000 strokes : 40.0

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 6.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.57  
Tolerance mm : + 0.25

Rated speed rpm : 1381  
guide sleeve  
travel mm : 10.37  
Tolerance mm : + 0.25

Rated speed rpm : 940  
guide sleeve  
travel mm : 6.87  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 2.90  
Tolerance mm : + 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 4.01  
Tolerance mm : + 0.25

Rated speed rpm : 1650

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 11.10  
Tolerance mm : + 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 236.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 302.0  
tolerance degree : + 4.0

rack travel mm : -1.60  
Rated speed rpm : 1352  
Tolerance 1/min : + 5

rack travel mm : -8.70  
Rated speed rpm : 1465  
Tolerance 1/min : + 15

rack travel mm : -12.20  
Tolerance mm : + 0.50  
Rated speed rpm : 1550

##### LOW IDLE

control lever  
position degree : 253.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : < -4.60

Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 700  
rack travel mm : -1.15  
Tolerance mm : + 0.10

Rated speed rpm : 1300  
rack travel mm : -0.50  
Tolerance mm : + 0.25

Rated speed rpm : 350  
rack travel mm : -2.90  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1200  
Pressure hPa : 1200

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.20  
Tolerance mm : + 0.20

Rated speed rpm : 1200

Pressure hPa : 320  
rack travel mm : -3.60  
Tolerance mm : + 0.20

Pressure hPa : 520  
rack travel mm : -2.50  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 275  
Check  
speed 1/min : < 285

D08

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.60  
Rated speed rpm : 1352  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 325



rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113  
Combination No. : 0 402 746 602  
Injection pump  
Pump designation : PES6P120A320RS7359  
: -1  
EP type number : 0 412 726 949  
Governor  
Governor design. : RQ275/1050PA1217-1  
Governor no. : 0 421 801 798

Cust. part No. : CCEP 5152 66-229

## Customer-spec. information

Customer : RVI  
Motor : MIDRO62045 R41  
Power KW : 221.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.10  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.19  
Tolerance mm : ± 0.20

Rated speed rpm : 1122  
guide sleeve  
travel mm : 6.36  
Tolerance mm : ± 0.15

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 408  
guide sleeve  
travel mm : 5.26  
Tolerance mm : ± 0.10

Rated speed rpm : 480  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1330  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1177

Rack travel in mm : 12.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure

hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance

cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 274.0  
tolerance degree : ± 4.0

rack travel mm : -1.00  
Rated speed rpm : 1115  
Tolerance 1/min : ± 5

rack travel mm : -9.30  
Rated speed rpm : 1235  
Tolerance 1/min : ± 15

rack travel mm : -12.80  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 255.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : -7.10  
Tolerance mm : ± 0.10

rack travel mm : -11.30  
Rated speed rpm : 395  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > -4.40

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.15  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -1.55  
Tolerance mm : + 0.15

Pressure hPa : 400  
rack travel mm : -0.60  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 195  
Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm3/1000 strokes : 286.0

Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 182.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1115  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm3/1000 strokes : 140.0  
Tolerance  
cm3/1000 strokes : + 15.0  
Check tolerance  
cm3/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -7.10  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 25.0  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.05.95  
Test oil : ISO 4113

Combination No. : 0 402 746 650

Injection pump  
Pump designation : PES6P120A320RS7344  
EP type number : 0 412 726 914

Governor  
Governor design. : RQ275/1050PA999-6  
Governor no. : 0 421 801 785

Cust. part No. : CCEP 5151 66-230

## Customer-spec. information

Customer : RVI  
Motor : MIDR 062045 M41  
Power kW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 145  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.50  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.20  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1132  
guide sleeve  
travel mm : 6.37  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 416  
guide sleeve  
travel mm : 3.44  
Tolerance mm : ± 0.10

Rated speed rpm : 560  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 275.0  
tolerance degree : ± 4.0

rack travel mm : -1.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 5

rack travel mm : -7.70  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15

rack travel mm : -11.25  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 250.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -7.20  
Tolerance mm : ± 0.10

rack travel mm : -9.70  
Rated speed rpm : 365  
Tolerance 1/min : + 20

Rated speed rpm : 200  
CRT mm min. : < -6.00

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Rated speed rpm : 1050  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.75  
Tolerance mm : + 0.30

Rated speed rpm : 500

Pressure hPa : 320  
rack travel mm : -2.75  
Tolerance mm : + 0.15

Pressure hPa : 560  
rack travel mm : -1.25  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm3/1000 strokes : 284.0

Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 114.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 150.0  
Tolerance  
cm3/1000 strokes : + 15.0  
Check tolerance  
cm3/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.20  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 35.0  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0



End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.05.95  
Test oil : ISO 4113

Combination No. : 0 402 746 924

Injection pump  
Pump designation : PES6P110A320RS7243  
EP type number : 0 412 716 806

Governor  
Governor design. : RQV275...1250PA942  
: -2K  
Governor no. : 0 421 815 288

Cust. part No. : CCEP5124B

Customer spec. information  
Customer : RVI  
Motor : MIDR06-06-26 L/2  
Power KW : 132.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.90  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 26.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 5.0
Speed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1320
guide sleeve	
travel mm	: 9.80
Tolerance mm	: ± 0.10

Rated speed rpm	: 1000
guide sleeve	
travel mm	: 7.20
Tolerance mm	: ± 0.20

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.00
Tolerance mm	: ± 0.10

Rated speed rpm	: 600
guide sleeve	
travel mm	: 4.40
Tolerance mm	: ± 0.20

Rated speed rpm	: 1600
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm	: 1450
-----------------	--------

Rack travel in mm	: 10.10
Tolerance mm	: ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
-----------------	--------

Aneroid pressure	
hPa	: 1000
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 141.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.5
Speed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5

##### RATED SPEED

control lever	
position degree	: 276.0
tolerance degree	: ± 4.0

rack travel mm	: -1.00
Rated speed rpm	: 1325
Tolerance 1/min	: ± 5

rack travel mm	: -9.00
Rated speed rpm	: 1475
Tolerance 1/min	: ± 15

rack travel mm	: -12.55
Tolerance mm	: ± 0.55
Rated speed rpm	: 1600

##### LOW IDLE

control lever	
position degree	: 222.0
tolerance degree	: ± 4.0

##### Testing:

Rated speed rpm	: 275
rack travel mm	: -7.60
Tolerance mm	: ± 0.10

Rated speed rpm	: 200
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CRT mm min.	: < -7.00
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Rated speed rpm	: 415
-----------------	-------

##### TORQUE CONTROL

Rated speed rpm	: 1250
-----------------	--------

Rated speed rpm	: 650
-----------------	-------

rack travel mm : -1.00  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 650  
 rack travel mm : -6.00  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 300  
 rack travel mm : -1.60  
 Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
 Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 1250  
 rack travel mm : -2.70  
 Tolerance mm : + 0.20

Rated speed rpm : 1250

Pressure hPa : 180  
 rack travel mm : -2.25  
 Tolerance mm : + 0.15

Pressure hPa : 280  
 rack travel mm : -1.75  
 Tolerance mm : + 0.05

---

##### START CUT-OUT

Rated speed rpm : < 225  
 Check  
 speed 1/min : < 245

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 650  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 126.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure  
 hPa : -

Rated speed rpm : 650  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 40.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 8.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 80.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

---

##### BREAKAWAY

Rack travel in mm : -1.00  
 Rated speed rpm : 1325  
 Tolerance 1/min : + 5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 115.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 15.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 19.0

---

##### LOW IDLE

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 26.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000s. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.05.95  
Test oil : ISO 4113  
Combination No. : 0 402 746 928  
Injection pump  
Pump designation : PES6P110A320RS7243  
EP type number : 0 412 716 806  
Governor  
Governor design. : RQV275...1175PA942  
: -3K  
Governor no. : 0 421 815 294  
Cust. part No. : CCEP5125B

## Customer-spec. information

Customer : RVI  
Motor : MIDR06-06-26 M/2  
Power KW : 132.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

D22

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.90  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1175

Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm <sup>3</sup> /1000S.	: 7.5
Del. quantity cm <sup>3</sup> /1000 strokes	: 25.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 5.0
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 4.5
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1250
guide sleeve travel mm	: 9.20
Tolerance mm	: ± 0.10

Rated speed rpm	: 1000
guide sleeve travel mm	: 7.20
Tolerance mm	: ± 0.20

Rated speed rpm	: 275
guide sleeve travel mm	: 1.00
Tolerance mm	: ± 0.10

Rated speed rpm	: 600
guide sleeve travel mm	: 4.40
Tolerance mm	: ± 0.20

Rated speed rpm	: 1600
guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm	: 1450
Rack travel in mm	: 10.10
Tolerance mm	: ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1175
-----------------	--------

Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 153.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.5
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

##### RATED SPEED

control lever position degree	: 294.0
tolerance degree	: ± 4.0

rack travel mm	: -1.00
Rated speed rpm	: 1260
Tolerance 1/min	: ± 5

rack travel mm	: -9.45
Rated speed rpm	: 1440
Tolerance 1/min	: ± 15

rack travel mm	: -12.95
Tolerance mm	: ± 0.55
Rated speed rpm	: 1550

rack travel mm	: 4.00
----------------	--------

##### LOW IDLE

control lever position degree	: 242.0
tolerance degree	: ± 4.0

##### Testing:

Rated speed rpm	: 275
rack travel mm	: -8.30
Tolerance mm	: ± 0.10

Rated speed rpm	: 200
CRT mm min.	: < -7.70

Rated speed rpm	: 415
-----------------	-------

##### TORQUE CONTROL

Rated speed rpm	: 1175
-----------------	--------

Rated speed rpm : 700  
rack travel mm : -0.75  
Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : -6.50  
Tolerance mm : + 0.10

Rated speed rpm : 300  
rack travel mm : -1.50  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1175  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1175  
rack travel mm : -3.40  
Tolerance mm : + 0.10

Rated speed rpm : 1175

Pressure hPa : 240  
rack travel mm : 0.10  
Tolerance mm : + 2.70

Pressure hPa : 420  
rack travel mm : -1.70  
Tolerance mm : + 0.05

---

##### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

##### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1260  
Tolerance 1/min : + 5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

##### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 12.05.95  
Test oil : ISO 4113

Combination No. : 0 402 746 952

Injection pump  
Pump designation : PES6P120A320RS7294  
EP type number : 0 412 726 895

Governor  
Governor design. : RQV275...1000PA1001  
: -2  
Governor no. : 0 421 813 989

Cust. part No. : CCEP-5136 66-214

## Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 N/3  
Power kW : 283.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 19.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °N<sub>W</sub> : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : -8.20  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.66  
Tolerance mm : + 0.10

Rated speed rpm : 1086  
guide sleeve  
travel mm : 8.46  
Tolerance mm : + 0.10

Rated speed rpm : 773  
guide sleeve  
travel mm : 6.09  
Tolerance mm : + 0.20

Rated speed rpm : 343  
guide sleeve  
travel mm : 2.33  
Tolerance mm : + 0.20

Rated speed rpm : 393  
guide sleeve  
travel mm : 2.99  
Tolerance mm : + 0.20

Rated speed rpm : 490  
guide sleeve  
travel mm : 3.81  
Tolerance mm : + 0.20

Rated speed rpm : 1370  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1200

Rack travel in mm : 12.20  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 301.0  
tolerance degree :  $\pm$  4.0

rack travel mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min :  $\pm$  5

rack travel mm : -9.30  
Rated speed rpm : 1205  
Tolerance 1/min :  $\pm$  15

rack travel mm : -12.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 247.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -8.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. :  $<$  -6.80

Rated speed rpm : 365

---

#### TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : -4.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.80  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -2.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 480  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  195

Check  
speed 1/min :  $<$  215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

# BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

---

# STARTING FUEL DELIVERY

Del. quantity  
cm3/1000 strokes : 160.0  
Tolerance  
cm3/1000 strokes : + 10.0  
Check tolerance  
cm3/1000S. : + 14.0

---

# LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.20  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 31.0  
Tolerance  
cm3/1000 strokes : + 2.5  
Check tolerance  
cm3/1000S. : + 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.05.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 953  
  
Injection pump  
Pump designation : PES6P120A320RS7294  
EP type number : 0 412 726 895  
  
Governor  
Governor design. : RQV275...1000PA1001  
: -1  
Governor no. : 0 421 813 936  
  
Cust. part No. : CCEP-5135 66-213

## Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 J/3  
Power KW : 306.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 071  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 13.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600  
  
Del. quantity  
cm3/1000 strokes : 310.0  
  
Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.60  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.29  
Tolerance mm : + 0.10

Rated speed rpm : 1086  
guide sleeve  
travel mm : 8.46  
Tolerance mm : + 0.10

Rated speed rpm : 773  
guide sleeve  
travel mm : 6.09  
Tolerance mm : + 0.20

Rated speed rpm : 343  
guide sleeve  
travel mm : 2.33  
Tolerance mm : + 0.20

Rated speed rpm : 393  
guide sleeve  
travel mm : 2.99  
Tolerance mm : + 0.20

Rated speed rpm : 490

guide sleeve  
travel mm : 3.81  
Tolerance mm : + 0.20

Rated speed rpm : 1370  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1185

Rack travel in mm : 12.60  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 302.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

rack travel mm : -9.70  
Rated speed rpm : 1210  
Tolerance 1/min : + 15

rack travel mm : -13.25  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 246.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. :  $<$  -7.20

Rated speed rpm : 370

---

#### TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : -5.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -3.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : -0.95  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  225

E04

Check  
speed 1/min :  $<$  245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0



---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.05.95  
Test oil : ISO 4113

Combination No. : 0 402 946 010

Injection pump  
Pump designation : PES6P120A32ORS8028  
EP type number : 0 412 926 021

Governor  
Governor design. : RQV275...1175PA1101K  
Governor no. : 0 421 815 982

Cust. part No. : CCEP 5133 A 66-193

## Customer-spec. information

Customer : RVI  
Motor : MIDR 060226 M51  
Power KW : 158.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.  
mm : 21.00

and maximum rack  
travel : 12.30

Difference ° CS : 2.00

## BASIC SETTING

Rated speed rpm : 1175

Del. quantity  
cm<sup>3</sup>/1000 strokes : 268.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.30  
Tolerance mm : + 0.20

Del. quantity  
cm3/1000 strokes : 42.0

Tolerance  
cm3/1000 strokes : +- 2.0

Check tolerance  
cm3/1000S. : +- 6.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.01  
Tolerance mm : + 0.10

Rated speed rpm : 1230  
guide sleeve  
travel mm : 8.95  
Tolerance mm : + 0.10

Rated speed rpm : 877  
guide sleeve  
travel mm : 6.51  
Tolerance mm : + 0.20

Rated speed rpm : 389  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.20

Rated speed rpm : 439  
guide sleeve  
travel mm : 3.01  
Tolerance mm : + 0.20

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.92  
Tolerance mm : + 0.20

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 11.20  
Tolerance mm : + 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
Aneroid pressure  
hPa : 1600

Del. quantity  
cm3/1000 strokes : 268.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 295.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1250  
Tolerance 1/min : + 15

rack travel mm : -9.70  
Rated speed rpm : 1420  
Tolerance 1/min : + 5

rack travel mm : -13.20  
Tolerance mm : + 0.55  
Rated speed rpm : 1550

##### LOW IDLE

control lever  
position degree : 245.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm max. :  $<$  -6.40

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 650  
rack travel mm : -1.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -2.80  
Tolerance mm :  $\pm$  0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1175  
Pressure hPa : 1600

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1175

Pressure hPa : 320  
rack travel mm : -4.70  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 560  
rack travel mm : -2.95  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1250  
Tolerance 1/min :  $\pm$  15

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.06.95  
Test oil : ISO 4113  
Combination No. : 0 402 946 011  
Injection pump  
Pump designation : PES6P120A32ORS8028  
EP type number : 0 412 926 021  
Governor  
Governor design. : RQV275...1250PA1125K  
Governor no. : 0 421 815 981

Cust. part No. : CCEP 5140A 66-205

## Customer-spec. information

Customer : RVI  
Motor : MIDR 06.02.26L51  
Power kW : 132.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2 417 413 078  
Inlet press. bar : 2.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.00  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 11.00  
Tolerance mm : + 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## Start of delivery mark

Barrel no. : 1  
Beginning of delivery difference  
betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 10.00  
Difference ° CS : 2.25

## BASIC SETTING

Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.60  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.00  
Tolerance mm : + 0.15

Rated speed rpm : 1355  
guide sleeve  
travel mm : 10.10  
Tolerance mm : + 0.10

Rated speed rpm : 929  
guide sleeve  
travel mm : 6.80  
Tolerance mm : + 0.20

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.20

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.01  
Tolerance mm : + 0.20

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.92  
Tolerance mm : + 0.20

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 10.90  
Tolerance mm : + 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 296.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1345  
Tolerance 1/min : + 15

rack travel mm : -8.60  
Rated speed rpm : 1470  
Tolerance 1/min : + 5

rack travel mm : -12.10  
Tolerance mm : + 0.55  
Rated speed rpm : 1600

##### LOW IDLE

control lever  
position degree : 244.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm max. :  $<$  -5.20

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 650  
rack travel mm : -1.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -1.70  
Tolerance mm :  $\pm$  0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1600  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 200  
rack travel mm : -3.70  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 360  
rack travel mm : -2.60  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1345  
Tolerance 1/min :  $\pm$  15

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0



Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.06.95  
Test oil : ISO 4113

Combination No. : 0 403 446 310

Injection pump  
Pump designation : PES6MW100/320RS1227Z  
EP type number : 0 413 406 217

Governor  
Governor design. : RQV325...1300MW126  
Governor no. : 0 420 083 279

Cust. part No. : 1249952

Customer-spec. information  
Customer : DAF  
Motor : NS133L  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm3/1000S. : 6.0  
 Rated speed rpm : 325  
 Rack travel in mm : 4.50  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity  
 cm3/1000 strokes : 9.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  4.5  
 Spread  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.67  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1334  
 guide sleeve  
 travel mm : 8.48  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 872  
 guide sleeve  
 travel mm : 4.97  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 363  
 guide sleeve  
 travel mm : 2.05  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 413  
 guide sleeve  
 travel mm : 2.50  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 490  
 guide sleeve  
 travel mm : 2.93  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1600  
 guide sleeve  
 travel mm : 11.50

Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1350  
 Rack travel in mm : 16.50  
 Tolerance mm :  $\pm$  1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm3/1000 strokes : 94.5  
 Tolerance  
 cm3/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  3.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 6.0

---

RATED SPEED

control lever  
 position degree : 122.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 10.85  
 Rated speed rpm : 1332  
 Tolerance 1/min :  $\pm$  8  
 rack travel mm : 4.00  
 Rated speed rpm : 1455  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1550

---

LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 325  
 rack travel mm : 4.50

Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 225  
CRT mm min. :  $>$  6.00

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1300  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : 290  
Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 160  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### BREAKAWAY

Rack travel in mm : 10.85  
Rated speed rpm : 1332  
Tolerance 1/min :  $\pm$  8

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.06.95  
Test oil : ISO 4113  
Combination No. : 0 403 446 317  
Injection pump  
Pump designation : PES6MW100/320RS1214  
: -1  
EP type number : 0 413 406 224  
Governor  
Governor design. : RGV275...1250MW115K  
Governor no. : 0 420 083 994

Cust. part No. :

Customer-spec. information  
Customer : RVI  
Motor : MIDR 060226 W  
Power KW : 151.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2 417 413 033  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

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x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 18.00  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 14.15  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 275

Rack travel in mm : -8.10  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.00  
Tolerance mm : + 0.25

Rated speed rpm : 1344  
guide sleeve  
travel mm : 9.99  
Tolerance mm : + 0.25

Rated speed rpm : 924  
guide sleeve  
travel mm : 6.77  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.01  
Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.92  
Tolerance mm : + 0.25

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 11.00  
Tolerance mm : + 2.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 294.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1305  
Tolerance 1/min : + 15

rack travel mm : -10.10  
Rated speed rpm : 1465  
Tolerance 1/min : + 5

rack travel mm : -13.60  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

---

##### LOW IDLE

control lever  
position degree : 244.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 275  
rack travel mm : -8.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  -7.50

### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -0.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.40

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1000  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : -3.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 200  
rack travel mm : -2.35  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 300  
rack travel mm : -1.75  
Tolerance mm :  $\pm$  0.05

### START CUT-OUT

Rated speed rpm :  $<$  230  
Check  
speed 1/min :  $<$  245

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  7.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.0

### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1305  
Tolerance 1/min :  $\pm$  15

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 13.0

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : -8.10  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.06.95  
Test oil : ISO 4113  
  
Combination No. : 0 403 446 318  
  
Injection pump  
Pump designation : PES6MW100/320RS1214  
: -1  
EP type number : 0 413 406 224  
  
Governor  
Governor design. : RQV275...1250MW115  
: -1K  
Governor no. : 0 420 083 992  
  
Cust. part No. :

## Customer-spec. information

Customer : RVI  
Motor : MIDR 060226 V  
Power kW : 129.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 033  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.25  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 18.00  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 13.15  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 275

Rack travel in mm : -7.50  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.00  
Tolerance mm : + 0.25

Rated speed rpm : 1314  
guide sleeve  
travel mm : 9.71  
Tolerance mm : + 0.25

Rated speed rpm : 912  
guide sleeve  
travel mm : 6.70  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 2.90  
Tolerance mm : + 0.25

Rated speed rpm : 560

guide sleeve  
travel mm : 4.01  
Tolerance mm : + 0.25

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1450  
Rack travel in mm : 11.00  
Tolerance mm : + 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever  
position degree : 292.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1300  
Tolerance 1/min : + 15

rack travel mm : -9.10  
Rated speed rpm : 1455  
Tolerance 1/min : + 5

rack travel mm : -12.60  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

##### LOW IDLE

control lever  
position degree : 242.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $<$  -6.90

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -0.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.40

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1000  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : -1.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 120  
rack travel mm : -1.40  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 240  
rack travel mm : -0.50

Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  230  
Check  
speed 1/min :  $<$  245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1300  
Tolerance 1/min :  $\pm$  15

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.06.95  
Test oil : ISO 4113

Combination No. : 0 403 476 123

Injection pump  
Pump designation : PES6MW100/320RS1227Z  
EP type number : 0 413 406 217

Governor  
Governor design. : RSV325...1300MWDA350  
Governor no. : 0 420 085 200

Cust. part No. : 1249935

Customer-spec. information  
Customer : DAF  
Motor : NS133L  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm <sup>3</sup> /1000S.	:	6.0
Rated speed rpm	:	325
Rack travel in mm	:	4.50
Tolerance mm	:	+ 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	9.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.5
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	3.5
Check tolerance cm <sup>3</sup> /1000S.	:	5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm	:	800
Rack travel in mm	:	0.65
Tolerance mm	:	+ 0.35
governor spring pre-tension click setting x	:	4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1000
Aneroid pressure hPa	:	1000
Del. quantity cm <sup>3</sup> /1000 strokes	:	94.5
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 3.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	3.5
Check tolerance cm <sup>3</sup> /1000S.	:	6.0

##### RATED SPEED

control lever position degree	:	102.0
tolerance degree	:	+ 4.0

rack travel mm	:	10.85
Rated speed rpm	:	1332
Tolerance 1/min	:	+ 8

rack travel mm	:	4.00
Rated speed rpm	:	1425
Tolerance 1/min	:	+ 15

rack travel mm	:	1.00
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1550

rack travel mm	:	4.00
Rated speed rpm	:	1455

##### LOW IDLE

control lever position degree	:	70.0
tolerance degree	:	+ 4.0

##### Setting point w/out bumper spring

Rated speed rpm	:	325
rack travel mm	:	4.00

##### Testing:

Rated speed rpm	:	325
rack travel mm	:	4.50
Tolerance mm	:	+ 0.10

rack travel mm	:	2.00
Rated speed rpm	:	485
Tolerance 1/min	:	+ 35

##### TORQUE CONTROL

Rated speed rpm	:	1000
rack travel mm	:	11.85
Tolerance mm	:	+ 0.05

Rated speed rpm	:	1300
rack travel mm	:	11.85
Tolerance mm	:	+ 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : 290  
Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 160  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

#### BREAKAWAY

Rack travel in mm : 10.85  
Rated speed rpm : 1332  
Tolerance 1/min :  $\pm$  8

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.07.95  
Test oil : ISO 4113  
Combination No. : 0 403 486 110  
Injection pump  
Pump designation : PES6MW100/321RS1192  
: -1  
EP type number : 0 413 406 242  
Governor  
Governor design. : RSV300...1300MWOA802  
: -1  
Governor no. : 0 420 085 132  
Cust. part No. : 3-7493

Customer-spec. information  
Customer : MAN  
Motor : D0826LE40  
Power KW : 199.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.05  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0



---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 4.80  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 5.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

##### RATED SPEED

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

rack travel mm : 12.00  
Rated speed rpm : 1355  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1475  
Tolerance 1/min : ± 15

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1650

---

##### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 13.05  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 13.05  
Tolerance mm : ± 0.10

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -

Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
  
Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1355  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed

F02

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.95  
Test oil : ISO 4113

Combination No. : 0 401 840 777

Injection pump  
Pump designation : PE12P120A520/4LS3840  
: -1  
EP type number : 0 411 820 731

Governor  
Governor design. : RQV250...900PA1198  
Governor no. : 0 421 814 117

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : D2842LE  
Power KW : 440.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

F03

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 12

## BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 11.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 6.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1060

Rack travel in mm : 10.40  
Tolerance mm : ± 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

##### RATED SPEED

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

rack travel mm : 10.40  
Rated speed rpm : 945  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1055  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

---

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 30.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 250  
rack travel mm : 6.90  
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 7.80

Rated speed rpm : 350

---

##### TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 11.40  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

---

##### START CUT-OUT

Rated speed rpm : < 170  
Check  
speed 1/min : < 190

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

#### BREAKAWAY

Rack travel in mm : 10.40  
Rated speed rpm : 945  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 6.90  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.07.95  
Test oil : ISO 4113

Combination No. : 0 401 846 933

Injection pump  
Pump designation : PE6P110A320RS3260  
EP type number : 0 411 816 775

Governor  
Governor design. : RQ250/1050PA969  
Governor no. : 0 421 801 538

Cust. part No. :

Customer spec. information  
Customer : HAEP  
Motor : X6130 NA

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Speed	
Tolerance	
cm3/1000 strokes :	4.0

Check tolerance	
cm3/1000S. :	7.5

Rated speed rpm :	250
-------------------	-----

Rack travel in mm :	7.80
Tolerance mm :	+ 0.20

Del. quantity	
cm3/1000 strokes :	17.5

Tolerance	
cm3/1000 strokes :	+ 2.5

Check tolerance	
cm3/1000S. :	+ 5.0

Speed	
Tolerance	

cm3/1000 strokes :	4.5
--------------------	-----

Check tolerance	
cm3/1000S. :	7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm :	250
guide sleeve	
travel mm :	3.79
Tolerance mm :	+ 0.10

Rated speed rpm :	1100
guide sleeve	
travel mm :	8.47
Tolerance mm :	+ 0.10

Rated speed rpm :	1035
guide sleeve	
travel mm :	8.20
Tolerance mm :	+ 0.10

Rated speed rpm :	796
guide sleeve	
travel mm :	8.05
Tolerance mm :	+ 0.10

Rated speed rpm :	319
guide sleeve	
travel mm :	7.27
Tolerance mm :	+ 0.10

Rated speed rpm :	380
guide sleeve	
travel mm :	8.00
Tolerance mm :	+ 0.10

Rated speed rpm :	1200
guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

Rated speed rpm :	830
guide sleeve	
travel mm :	8.15
Tolerance mm :	+ 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm :	500
-------------------	-----

Rack travel in mm :	13.40
Tolerance mm :	+ 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure	
hPa :	-

Del. quantity	
cm3/1000 strokes :	131.0

Tolerance	
cm3/1000 strokes :	+ 1.0

Check tolerance	
cm3/1000S. :	+ 3.5

Speed	
Tolerance	

cm3/1000 strokes :	4.0
--------------------	-----

Check tolerance	
cm3/1000S. :	7.5

##### RATED SPEED

tolerance degree :	+ 4.0
--------------------	-------

rack travel mm :	10.40
------------------	-------

Rated speed rpm :	1093
-------------------	------

Tolerance 1/min :	+ 8
-------------------	-----

rack travel mm :	4.00
------------------	------

Rated speed rpm :	1125
-------------------	------

Tolerance 1/min :	+ 15
-------------------	------

rack travel mm :	0.90
------------------	------

Tolerance mm :	+ 0.90
----------------	--------

Rated speed rpm :	1250
-------------------	------

##### LOW IDLE

control lever	
position degree :	77.0

tolerance degree :	+ 4.0
--------------------	-------

### Testing:

Rated speed rpm : 250  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 315  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 100

CRT mm min. :  $>$  9.30

---

### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1035  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.15

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

### BREAKAWAY

Rack travel in mm : 10.40  
Rated speed rpm : 1093  
Tolerance 1/min :  $\pm$  8

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113

Combination No. : 0 401 846 956

Injection pump  
Pump designation : PE6P120A32ORS3196  
EP type number : 0 411 826 763

Governor  
Governor design. : RQV200...1100PA729  
: -4  
Governor no. : 0 421 813 950

Cust. part No. : 1333954

Customer-spec. information  
Customer : SCANIA  
Motor : DSC9 10

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

control lever  
position degree : 116.0  
tolerance degree : ± 4.0

rack travel mm : 9.50  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1250  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

control lever  
position degree : 9.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min : ± 30

Rated speed rpm : 150

CRT mm min. : > 5.80

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.55  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 350  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 9.50  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.07.95  
Test oil : ISO 4113  
  
Combination No. : 0 401 846 972  
  
Injection pump  
Pump designation : PE6P110A320RS3302Y  
EP type number : 0 411 816 790  
  
Governor  
Governor design. : RQ300/1000PA1012-1  
Governor no. : 0 421 801 648

Cust. part No. : 1253697

Customer-spec. information  
Customer : DAF  
Motor : LT 160 L  
Power KW : 160.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 13.00  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 13.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 7.50  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.08  
Tolerance mm : + 0.10

Rated speed rpm : 1060  
guide sleeve  
travel mm : 6.36  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 372  
guide sleeve  
travel mm : 5.03  
Tolerance mm : + 0.10

Rated speed rpm : 440  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1210

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 12.05  
Rated speed rpm : 1052  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1120  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.50  
Rated speed rpm : 370  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  11.00

---

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600

Pressure hPa : 360  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 270  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

#### BREAKAWAY

Rack travel in mm : 12.05  
Rated speed rpm : 1052  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  23.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.06.95  
Test oil : ISO 4113  
Combination No. : 0 401 848 828  
Injection pump  
Pump designation : PE8P120A520/4LS3850  
EP type number : 0 411 828 723

Governor  
Governor design. : RQ300/900PA1230  
Governor no. : 0 421 801 792

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : D2848LE

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 7.40  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 42.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.44  
Tolerance mm : + 0.10

Rated speed rpm : 932  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

Rated speed rpm : 880  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 433  
guide sleeve  
travel mm : 4.94  
Tolerance mm : + 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1050

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 208.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

RATED SPEED

control lever  
position degree : 32.0  
tolerance degree : + 4.0

control lever  
position degree : 94.0  
tolerance degree : + 4.0

rack travel mm : 10.90  
Rated speed rpm : 925  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 970  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 75.0



tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 7.40  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200  
CRT mm min. : > 9.80

---

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.90  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 11.90  
Tolerance mm : + 0.10

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 925  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.40  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.06.95  
Test oil : ISO 4113

Combination No. : 0 401 849 757

Injection pump  
Pump designation : PE10P120A520/4LS3863  
EP type number : 0 411 897 711

Governor  
Governor design. : RQ300/900PA1230  
Governor no. : 0 421 801 792

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : D2840LE

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8  
                  : - 7- 6- 3- 5  
                  : - 2

Phasing : 0-45-72-117-144  
          : -189-216-261-288  
          : -333

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

## Start of delivery mark

Barrel no. : 10

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 7.00  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.44  
Tolerance mm : ± 0.10

Rated speed rpm : 932  
guide sleeve  
travel mm : 6.37  
Tolerance mm : ± 0.10

Rated speed rpm : 880  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 433  
guide sleeve  
travel mm : 4.94  
Tolerance mm : ± 0.10

Rated speed rpm : 510

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

RATED SPEED

control lever  
position degree : 32.0  
tolerance degree : ± 4.0

control lever  
position degree : 94.0  
tolerance degree : ± 4.0

rack travel mm : 11.90  
Rated speed rpm : 925  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 970  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1100

---

## LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 12.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  9.40

---

## TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

## BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 925  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.07.95  
Test oil : ISO 4113

Combination No. : 0 401 849 758

Injection pump  
Pump designation : PE10P110A320LS3864  
EP type number : 0 411 819 713

Governor  
Governor design. : RQ250/1150PA1255  
Governor no. : 0 421 801 797

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-10NA

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8  
                  : - 7- 6- 3- 5  
                  : - 2

Phasing : 0-45-72-117-144  
          : -189-216-261-288  
          : -333

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 10

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0

---

Tolerance  
cm3/1000 strokes : + 1.0

---

Check tolerance  
cm3/1000S. : + 4.0

---

Spreed  
Tolerance  
cm3/1000 strokes : 6.0

---

Check tolerance  
cm3/1000S. : 10.0

---

Rated speed rpm : 250

Rack travel in mm : 9.00  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 40.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spreed  
Tolerance  
cm3/1000 strokes : 7.0

Check tolerance  
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.38  
Tolerance mm : + 0.20

Rated speed rpm : 1234  
guide sleeve  
travel mm : 7.50  
Tolerance mm : + 0.15

Rated speed rpm : 1150  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 401  
guide sleeve  
travel mm : 4.83  
Tolerance mm : + 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 7.00

Tolerance mm : + 0.10

Rated speed rpm : 1340  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1100

Rack travel in mm : 15.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 125.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

---

RATED SPEED

control lever  
position degree : 36.0  
tolerance degree : + 4.0

control lever  
position degree : 98.0  
tolerance degree : + 4.0

rack travel mm : 10.50  
Rated speed rpm : 1202  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1265  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 13.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 7.30  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150  
CRT mm min. :  $>$  8.60

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

#### BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1202  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

F23

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95  
Test oil : ISO 4113

Combination No. : 0 401 876 312

Injection pump  
Pump designation : PE6P110A320RS492  
EP type number : 0 411 816 161

Governor  
Governor design. : RSV200...1100P1A305  
: -6  
Governor no. : 0 421 833 472

Cust. part No. :

Customer-spec. information  
Customer : VOLVO-PENTA  
Motor : TD71APP  
Power KW : 165.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 200

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 4.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
position degree : 54.0

control lever  
position degree : 104.0

rack travel mm : 10.50  
Rated speed rpm : 1115

Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1155

Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 67.0

control lever  
position degree : 17.0

##### Testing:

Rated speed rpm : 200  
rack travel mm : 5.00

Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 310

Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.55

Tolerance mm : + 0.05

---

# BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1115  
Tolerance 1/min :  $\pm$  5

---

# LOW IDLE

Rated speed rpm : 200  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.08.95  
Test oil : ISO 4113

Combination No. : 0 401 876 769

Injection pump  
Pump designation : PE6P120A32ORS3206-2  
EP type number : 0 411 826 784

Governor  
Governor design. : RSV250...1300POA374  
: -8  
Governor no. : 0 421 833 320

Cust. part No. : 864068 P05 v. 04/95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD71 B  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 078

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 114.0  
tolerance degree : + 4.0

rack travel mm : 9.10  
Rated speed rpm : 1340  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1430  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1530

rack travel mm : 4.00  
Rated speed rpm : 1440

##### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 4.70

##### Testing:

Rated speed rpm : 250  
rack travel mm : 5.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : + 30

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.10  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 780  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 360  
rack travel mm : 7.55  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 9.10  
Rated speed rpm : 1340  
Tolerance 1/min :  $\pm$  5

---

LOW IDLE

Rated speed rpm : 250

G01

rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.08.95

Test oil : ISO 4113

Combination No. : 0 401 876 784

## Injection pump

Pump designation : PE6P120A320RS3189

EP type number : 0 411 826 759

## Governor

Governor design. : RSV650...750P4A421

: -14

Governor no. : 0 421 833 467

Cust. part No. : 864537 P07 V. 05/95

## Customer-spec. information

Customer : PENTA

Motor : TWD 710 G

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Vibration damper

(RoBo diaphragm) : 4.2

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

## Test nozzle holder assembly

: 1 688 901 019

## Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 1000

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.65

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.00

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 178.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.40  
Tolerance mm : +- 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 94.0  
tolerance degree : +- 4.0

rack travel mm : 8.00  
Rated speed rpm : 752  
Tolerance 1/min : +- 3

rack travel mm : 4.00  
Rated speed rpm : 778  
Tolerance 1/min : +- 7

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 900

##### LOW IDLE

control lever  
position degree : 88.0  
tolerance degree : +- 4.0

##### Testing:

Rated speed rpm : 650  
rack travel mm : 3.40  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : +- 30

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 9.00  
Tolerance mm : +- 0.05

##### BREAKAWAY

Rack travel in mm : 8.00  
Rated speed rpm : 752  
Tolerance 1/min :  $\pm$  3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 650  
rack travel mm : 3.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.08.95  
Test oil : ISO 4113

Combination No. : 0 401 876 785

Injection pump  
Pump designation : PE6P120A320RS3189  
EP type number : 0 411 826 759

Governor  
Governor design. : RSV650...750P4A421  
: -8  
Governor no. : 0 421 833 361

Cust. part No. : 864849 P06 V. 02/95

Customer spec. information  
Customer : PENTA  
Motor : TD1210G

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 169  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.50  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

rack travel mm : 11.40  
Rated speed rpm : 750  
Tolerance 1/min : ± 3

rack travel mm : 4.00  
Rated speed rpm : 788  
Tolerance 1/min : ± 7

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 900

##### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 650  
rack travel mm : 3.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : ± 30

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.40  
Tolerance mm : ± 0.05

---

#### BREAKAWAY

Rack travel in mm : 11.40  
Rated speed rpm : 750  
Tolerance 1/min :  $\pm$  3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 650  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.08.95  
Test oil : ISO 4113

Combination No. : 0 401 876 790

Injection pump  
Pump designation : PE6P120A320RS3189  
EP type number : 0 411 826 759

Governor  
Governor design. : RSV650...750P4A421  
                  : -10  
Governor no. : 0 421 833 369

Cust. part No. : 864845 P04 V. 02/95

Customer spec. information  
Customer : PENTA  
Motor : TD1010G

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.50  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 90.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.60  
Rated speed rpm : 753  
Tolerance 1/min :  $\pm$  3

rack travel mm : 4.00  
Rated speed rpm : 783  
Tolerance 1/min :  $\pm$  7

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 900

##### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 650  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.05

##### BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 753  
Tolerance 1/min :  $\pm$  3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 650  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.08.95  
Test oil : ISO 4113

Combination No. : 0 401 876 801

Injection pump  
Pump designation : PE6P120A320RS3189  
EP type number : 0 411 826 759

Governor  
Governor design. : RSV250...900P1A421  
: -12  
Governor no. : 0 421 833 465

Cust. part No. : 866382 P05

Customer spec. information  
Customer : PENTA  
Motor : TWD 710P

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 010

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 8.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 155.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 51.0  
tolerance degree : + 4.0

control lever  
position degree : 101.0  
tolerance degree : + 4.0

rack travel mm : 7.15  
Rated speed rpm : 925  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 960  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1070

##### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

control lever  
position degree : 28.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 4.30

##### Testing:

Rated speed rpm : 250  
rack travel mm : 4.80  
Tolerance mm : + 0.20

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min : + 30

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 8.15  
Tolerance mm : + 0.05

##### BREAKAWAY

Rack travel in mm : 7.15  
Rated speed rpm : 925  
Tolerance 1/min : + 5



---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.95  
Test oil : ISO 4113

Combination No. : 0 401 876 805

Injection pump  
Pump designation : PE6P120A320RS3343  
EP type number : 0 411 826 813

Governor  
Governor design. : RSV350...1100P1A559  
Governor no. : 0 421 833 389

Cust. part No. : 1372022

Customer-spec. information  
Customer : SCANIA  
Motor : DSC945A

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rack travel in mm : 5.20  
Tolerance mm : ± 0.20

Del. quantity  
cm3/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 700

Rack travel in mm : 14.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 35.0  
tolerance degree : + 4.0

control lever  
position degree : 85.0  
tolerance degree : + 4.0

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.05  
Tolerance mm : + 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.05  
Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.00  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 330  
rack travel mm : 12.55  
Tolerance mm : + 0.15

Pressure hPa : 490  
rack travel mm : 13.45  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.95  
Test oil : ISO 4113

Combination No. : 0 401 876 808

Injection pump  
Pump designation : PE6P120A320RS3355  
EP type number : 0 411 826 814

Governor  
Governor design. : RSV300...1100P1A604  
Governor no. : 0 421 833 485

Cust. part No. : 3825516 P02 v. 5/95

Customer-spec. information  
Customer : PENTA  
Motor : TD1030ME  
Power KW : 190.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 85  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 9.90  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.70  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85  
Tolerance mm : + 0.55

governor spring  
pre-tension  
click setting x : 4.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### RATED SPEED

control lever  
position degree : 62.0  
tolerance degree : + 4.0

control lever  
position degree : 112.0  
tolerance degree : + 4.0

rack travel mm : 11.50  
Rated speed rpm : 1135  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1195

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + 4.0

control lever  
position degree : 26.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 4.20

##### Testing:

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 555  
rack travel mm : 2.30  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 140  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 179.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 11.50  
Rated speed rpm : 1135  
Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 036 760  
Injection pump  
Pump designation : PES6P120A720/3LS3255  
: -4  
EP type number : 0 412 026 775

Governor  
Governor design. : RQ300/1000PA813-24  
Governor no. : 0 421 801 790

Cust. part No. : 51.11103-7388

## Customer-spec. information

Customer : MAN  
Motor : D 2866 LOH 09/20  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

G20

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00  
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.38  
Tolerance mm : + 0.10

Rated speed rpm : 1060  
guide sleeve  
travel mm : 7.31  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 388  
guide sleeve  
travel mm : 5.48  
Tolerance mm : + 0.10

Rated speed rpm : 470  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 1230  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 550  
Rack travel in mm : 15.50  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 282.0  
tolerance degree : + 4.0

rack travel mm : 12.90  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1150  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1260

##### LOW IDLE

control lever  
position degree : 257.0  
tolerance degree : + 4.0

## Testing:

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.10  
  
rack travel mm : 2.00  
Rated speed rpm : 370  
Tolerance 1/min :  $\pm$  20  
  
Rated speed rpm : 200  
  
CRT mm min. :  $>$  9.80

## TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.05  
  
Rated speed rpm : 1000  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500  
  
Pressure hPa : 120  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 450  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.15

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

## BREAKAWAY

Rack travel in mm : 12.90  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.08.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 044 700  
  
Injection pump  
Pump designation : PES4P110A320RS3350  
EP type number : 0 412 014 700  
  
Governor  
Governor design. : RQV350...1400PA1221K  
Governor no. : 0 421 815 472  
  
Cust. part No. : 16700-D8703 / M  
                  : -2004

Customer-spec. information  
Customer : NMI  
Motor : B4.40 EURO II  
Power KW : 101.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 4- 2- 1- 3  
  
Phasing : 0-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 1300  
  
Rack travel in mm : 15.40  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0  
  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm3/1000S. : 9.0  
 Rated speed rpm : 350  
 Rack travel in mm : 9.50  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity  
 cm3/1000 strokes : 31.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  2.5  
 Check tolerance  
 cm3/1000S. :  $\pm$  5.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 6.0  
 Check tolerance  
 cm3/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.46  
 Tolerance mm :  $\pm$  0.20  
 Rated speed rpm : 1417  
 guide sleeve  
 travel mm : 9.99  
 Tolerance mm :  $\pm$  0.15  
 Rated speed rpm : 994  
 guide sleeve  
 travel mm : 6.77  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 610  
 guide sleeve  
 travel mm : 3.96  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1730  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1515  
 Rack travel in mm : 14.50  
 Tolerance mm :  $\pm$  1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm3/1000 strokes : 178.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  3.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 9.0

#### RATED SPEED

control lever  
 position degree : 65.0  
 tolerance degree :  $\pm$  4.0  
 control lever  
 position degree : 122.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 14.40  
 Rated speed rpm : 1410  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1585  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1640

#### LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree :  $\pm$  4.0  
 control lever  
 position degree : 26.0  
 tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
 rack travel mm : 9.50  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. : > 10.80  
Rated speed rpm : 500

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 780  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1000  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1300  
Pressure hPa : 1500  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1300  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1300

Pressure hPa : 940  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 520  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : > 270

Check  
speed 1/min : > 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 780  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 14.40  
Rated speed rpm : 1410  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.07.95  
Test oil : ISO 4113

Combination No. : 0 402 046 865

Injection pump  
Pump designation : PES6P120A320LS3321  
: -1  
EP type number : 0 412 026 776

Governor  
Governor design. : RQ275/950PA1085-1  
Governor no. : 0 421 801 761

Cust. part No. : 645 625

Customer-spec. information  
Customer : RABA  
Motor : SIEHE BEMERKUNG

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Check electrically unlatched starting  
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.0



Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 24.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0

Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.85  
Tolerance mm : + 0.10

Rated speed rpm : 1003  
guide sleeve  
travel mm : 6.55  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 369  
guide sleeve  
travel mm : 5.24  
Tolerance mm : + 0.10

Rated speed rpm : 440  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 500  
Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 193.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 37.0  
tolerance degree : + 4.0

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 13.60  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 5.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 355  
Tolerance 1/min : + 20

Rated speed rpm : 175

CRT mm min. : > 8.30

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.60  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.60  
Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 14.60  
Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.40  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : 13.10  
Tolerance mm : + 0.15

Pressure hPa : 350

rack travel mm : 13.80  
Tolerance mm : + 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

#### BREAKAWAY

Rack travel in mm : 13.60  
Rated speed rpm : 995  
Tolerance 1/min : + 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 24.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.70  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.08.95  
Test oil : ISO 4113

Combination No. : 0 402 618 809

Injection pump  
Pump designation : PE8P120A500/5RS7387  
EP type number : 0 412 628 911

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 12277648KY0120-17

## Customer-spec. information

Customer : MWM  
Motor : TBD 616-V16  
Power kW : 864.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 180  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 2- 5- 6- 3- 4  
: - 7- 8

Phasing : 0-30-45-75-270-300  
: -315-345  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.60  
Tolerance mm : + 0.05

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.50

Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 347.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 14.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 20.0

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.40

Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.08.95  
Test oil : ISO 4113  
Combination No. : 0 402 640 839  
Injection pump  
Pump designation : PE12P120A520LS7829  
: -1  
EP type number : 0 412 620 827  
Governor  
Governor design. : RQV300...1150PA1039K  
Governor no. : 0 421 815 314

Cust. part No. : 3-7227

Customer spec. information  
Customer : MAN  
Motor : D2842LE402  
Power KW : 809.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery blocking

Barrel no. : 12

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

---

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.24  
Tolerance mm : + 0.25

Rated speed rpm : 1206  
guide sleeve  
travel mm : 10.43  
Tolerance mm : + 0.25

Rated speed rpm : 795  
guide sleeve  
travel mm : 6.88  
Tolerance mm : + 0.25

Rated speed rpm : 329  
guide sleeve  
travel mm : 2.75  
Tolerance mm : + 0.25

Rated speed rpm : 379  
guide sleeve  
travel mm : 3.53  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 4.21  
Tolerance mm : + 0.25

Rated speed rpm : 1450  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

---

Rated speed rpm : 1265

Rack travel in mm : 13.70  
Tolerance mm : + 2.00

H07

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

---

control lever  
position degree : 120.0  
tolerance degree : + 4.0

rack travel mm : 13.80  
Rated speed rpm : 1203  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1345  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

LOW IDLE

---

control lever  
position degree : 75.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.80  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.30

Rated speed rpm : 330

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 400  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 240  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.80  
Rated speed rpm : 1203  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  14.0



---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113  
Combination No. : 0 402 646 604  
Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0 412 626 924  
Governor  
Governor design. : RQV350...1050PA795  
: -13  
Governor no. : 0 421 814 017

Cust. part No. : 1337549

Customer-spec. information  
Customer : SCANIA  
Motor : DS11 Allvarv

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

H10

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1280

Rack travel in mm : 12.00  
Tolerance mm : ± 1.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 45.0  
tolerance degree : ± 4.0

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

rack travel mm : 12.30  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

control lever  
position degree : 15.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 350  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 8.00

Rated speed rpm : 300

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 13.35

Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.30

H12

Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.07.95  
Test oil : ISO 4113

Combination No. : 0 402 646 627

Injection pump  
Pump designation : PE6P120A32ORS7297  
: -10  
EP type number : 0 412 626 921

Governor  
Governor design. : RQV350...1100PA795  
: -12  
Governor no. : 0 421 813 914

Cust. part No. : 1340653

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 909

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Overflow quantity  
min. L/h : 210  
Tolerance L/h : + 20.0

Test nozzle holde  
assembly : 1 688 901 104

H13

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : 0.10

Rack travel in mm : 13.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1300

Rack travel in mm : 12.00  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 47.0  
tolerance degree : ± 4.0

control lever  
position degree : 106.0  
tolerance degree : ± 4.0

rack travel mm : 12.20  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1270  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 250  
rack travel mm : 4.90  
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 6.40

Rated speed rpm : 250

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.25  
Tolerance mm : ± 0.05

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 470  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 670  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 1145

Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113  
Combination No. : 0 402 646 630  
Injection pump  
Pump designation : PE6P120A720RS7302  
: -10  
EP type number : 0 412 626 928  
Governor  
Governor design. : RQ200/950PA745-6  
Governor no. : 0 421 801 702

Cust. part No. : 1354204

Customer spec. information  
Customer : SCANIA  
Motor : DS 11 78

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0



---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.41  
Tolerance mm : + 0.20

Rated speed rpm : 1005  
guide sleeve  
travel mm : 4.88  
Tolerance mm : + 0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.88  
Tolerance mm : + 0.10

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 1045

guide sleeve  
travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 45.0  
tolerance degree : + 4.0

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 12.30  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 10.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 335  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150

CRT mm min. :  $>$  5.80

---

## TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 210

rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 400  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.50

Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 634  
  
Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0 412 626 924  
  
Governor  
Governor design. : RQ200...950PA745-5  
Governor no. : 0 421 801 695

Cust. part No. : 1356404

Customer spec. information  
Customer : SCANIA  
Motor : DSC 11 73

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.41  
Tolerance mm : + 0.20

Rated speed rpm : 1006  
guide sleeve  
travel mm : 4.90  
Tolerance mm : + 0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 355  
guide sleeve  
travel mm : 2.97  
Tolerance mm : + 0.10

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 1045

guide sleeve  
travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 500  
Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 43.0  
tolerance degree : + 4.0

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 10.20  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

## LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

control lever  
position degree : 11.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + 30

Rated speed rpm : 150

CRT mm min. : > 6.00

---

## TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 11.25  
Tolerance mm : + 0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### MEASUREMENT

Pressure hPa : 210  
rack travel mm : 10.60  
Tolerance mm : + 0.15

Pressure hPa : 270  
rack travel mm : 11.05  
Tolerance mm : + 0.05

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm3/1000 strokes : 179.0

Tolerance  
cm3/1000 strokes : + 4.0  
Check tolerance  
cm3/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 153.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0

---

## BREAKAWAY

Rack travel in mm : 10.20  
Rated speed rpm : 995  
Tolerance 1/min : + 5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 165.0  
Tolerance  
cm3/1000 strokes : + 20.0  
Check tolerance  
cm3/1000S. : + 24.0

---

### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : + 0.30  
Del. quantity  
cm3/1000 strokes : 16.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 637  
  
Injection pump  
Pump designation : PE6P120A720RS7188  
: -10Y  
EP type number : 0 412 626 927  
  
Governor  
Governor design. : RQ200...950PA745-4  
Governor no. : 0 421 801 694

Cust. part No. : 1355247

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 38

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 236.0

Tolerance  
cm3/1000 strokes : ± 1.0



---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.41  
Tolerance mm : + 0.20

Rated speed rpm : 1005  
guide sleeve  
travel mm : 4.88  
Tolerance mm : + 0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 355  
guide sleeve  
travel mm : 2.97  
Tolerance mm : + 0.10

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 1045

guide sleeve  
travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 500

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 49.0  
tolerance degree : + 4.0

control lever  
position degree : 103.0  
tolerance degree : + 4.0

rack travel mm : 12.20  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1120  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

## LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 11.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150

CRT mm min. :  $>$  6.00

---

## TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 440

H26

rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.05.95  
Test oil : ISO 4113  
Combination No. : 0 402 646 651A  
Injection pump  
Pump designation : PE6P120A320LS7357  
EP type number : 0 412 626 934  
Governor  
Governor design. : RQV325...975PA1190K  
Governor no. : 0 421 815 450

Cust. part No. :

Customer-spec. information  
Customer : LIAZ  
Motor : siehe Bemerkung

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.20  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 12.00  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 725  
Rack travel in mm : 13.20  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1100  
Rack travel in mm : 12.20  
Tolerance mm :  $\pm$  1.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 725  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 235.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.20  
Rated speed rpm : 1075  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1150  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 4.10  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 225  
CRT mm min. :  $>$  5.30

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 725  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 600  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000  
Pressure hPa : 1500  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000

Pressure hPa : 190  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 330  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 245  
Check  
speed 1/min : < 265

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 1075  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.08.95  
Test oil : ISO 4113

Combination No. : 0 402 646 745

Injection pump  
Pump designation : PE6P120A320LS7872  
EP type number : 0 412 626 912

Governor  
Governor design. : RQV300...1050PA1241K  
Governor no. : 0 421 815 476

Cust. part No. : B0165-6-13

Customer-spec. information  
Customer : KHD  
Motor : BF6M1015C  
Power KW : 300.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 105  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 4.90  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.74  
Tolerance mm : + 0.20

Rated speed rpm : 1107  
guide sleeve  
travel mm : 9.89  
Tolerance mm : + 0.15

Rated speed rpm : 772  
guide sleeve  
travel mm : 6.82  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.88  
Tolerance mm : + 0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1205

Rack travel in mm : 13.40  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 13.40  
Rated speed rpm : 1085  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 4.90  
Tolerance mm : + 0.10



Rated speed rpm : 200  
CRT mm min. : > 7.10  
Rated speed rpm : 355

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.40  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 12.30  
Tolerance mm : + 0.10

Rated speed rpm : 850  
rack travel mm : 13.80  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1700  
rack travel mm : 14.40  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 8.70  
Tolerance mm : + 0.20

Rated speed rpm : 1050

Pressure hPa : 420  
rack travel mm : 9.70  
Tolerance mm : + 0.20

Pressure hPa : 830  
rack travel mm : 12.40  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1700  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 353.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1085  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.70  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.90  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113

Combination No. : 0 402 646 887

Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0 412 626 924

Governor  
Governor design. : RQV200...950PA725-7  
Governor no. : 0 421 813 803

Cust. part No. : 1333122

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 23

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 190  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 9.50  
Tolerance mm : ± 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

rack travel mm : 12.80  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

control lever  
position degree : 10.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 6.00

Rated speed rpm : 300

##### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 995

Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 938  
  
Injection pump  
Pump designation : PE6P120A72ORS7188  
: -100  
EP type number : 0 412 626 925  
  
Governor  
Governor design. : RQ200/950PA745-3  
Governor no. : 0 421 801 579

Cust. part No. : 1334027

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 21

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 220.0

Tolerance  
cm3/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.41  
Tolerance mm : + 0.20

Rated speed rpm : 1005  
guide sleeve  
travel mm : 4.88  
Tolerance mm : + 0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 355  
guide sleeve  
travel mm : 2.97  
Tolerance mm : + 0.10

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 1045

guide sleeve  
travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 44.0  
tolerance degree : + 4.0

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 11.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150

CRT mm min. :  $>$  6.00

---

## TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 440

rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0



Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.08.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 795  
  
Injection pump  
Pump designation : PE8P120A320LS7873  
EP type number : 0 412 628 880  
  
Governor  
Governor design. : RGV300...1050PA1258K  
Governor no. : 0 421 815 490

Cust. part No. : 04223330KY0165-17

Customer-spec. information  
Customer : KHD  
Motor : BF8M1015/C  
Power KW : 400.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6  
                  : - 5- 4- 3

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.60  
Tolerance mm : + 0.20

Rated speed rpm : 1097  
guide sleeve  
travel mm : 10.07  
Tolerance mm : + 0.15

Rated speed rpm : 796  
guide sleeve  
travel mm : 6.87  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 4.02  
Tolerance mm : + 0.25

Rated speed rpm : 1340  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1178

Rack travel in mm : 13.20  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 119.0  
tolerance degree : + 4.0

rack travel mm : 13.20  
Rated speed rpm : 1085  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : > 7.00

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 800  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 450  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1000  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1050

Pressure hPa : 500  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 800  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.20  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.40  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  14.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  20.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.95  
Test oil : ISO 4113

Combination No. : 0 402 648 929B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886

Governor  
Governor design. : RQV300...950PA1033  
                  : -12  
Governor no. : 0 421 814 093

Cust. part No. : 0230741402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : +- 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 5.55  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 20.50  
Tolerance mm : +- 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm : + 0.25

Rated speed rpm : 1012  
guide sleeve  
travel mm : 8.56  
Tolerance mm : + 0.25

Rated speed rpm : 1600  
guide sleeve  
travel mm : 24.06  
Tolerance mm : + 0.25

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm : + 0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm : + 0.25

Rated speed rpm : 790

guide sleeve  
travel mm : 6.48  
Tolerance mm : + 0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1045

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 122.0  
tolerance degree : + 4.0

rack travel mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  7.60

Rated speed rpm : 375

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 860  
rack travel mm : 14.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 820  
rack travel mm : 14.65  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

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Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.95  
Test oil : ISO 4113

Combination No. : 0 402 648 940B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886

Governor  
Governor design. : RQ300/950PA1032-8  
Governor no. : 0 421 801 723

Cust. part No. : 0240740602

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.63  
Tolerance mm : + 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.69  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.35  
Tolerance mm : + 0.10

Rated speed rpm : 800  
guide sleeve  
travel mm : 6.09  
Tolerance mm : + 0.10

Rated speed rpm : 415  
guide sleeve  
travel mm : 3.72  
Tolerance mm : + 0.10

Rated speed rpm : 550

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 864  
guide sleeve  
travel mm : 6.26  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.00

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 870  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300

rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.95  
Test oil : ISO 4113

Combination No. : 0 402 648 941

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886

Governor  
Governor design. : RQV300...950PA1033  
: -13  
Governor no. : 0 421 814 094

Cust. part No. : 0240742202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.49  
Tolerance mm : + 0.15

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.52  
Tolerance mm : + 0.20

Rated speed rpm : 589  
guide sleeve  
travel mm : 4.97  
Tolerance mm : + 0.25

Rated speed rpm : 639  
guide sleeve  
travel mm : 5.51  
Tolerance mm : + 0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.48  
Tolerance mm : + 0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 12.00  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 226.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.60

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 870  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.95  
Test oil : ISO 4113

Combination No. : 0 402 648 942

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886

Governor  
Governor design. : RQ300/950PA1031-16  
Governor no. : 0 421 801 722

Cust. part No. : 0240742302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
Rated speed rpm	: 300
Rack travel in mm	: 5.70
Tolerance mm	: ± 0.30
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 13.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 6.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.63
Tolerance mm	: ± 0.10
Rated speed rpm	: 1005
guide sleeve	
travel mm	: 6.69
Tolerance mm	: ± 0.10
Rated speed rpm	: 950
guide sleeve	
travel mm	: 6.35
Tolerance mm	: ± 0.10
Rated speed rpm	: 800
guide sleeve	
travel mm	: 6.09
Tolerance mm	: ± 0.10
Rated speed rpm	: 428
guide sleeve	
travel mm	: 4.02

Tolerance mm	: ± 0.10
Rated speed rpm	: 550
guide sleeve	
travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 1160
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 864
guide sleeve	
travel mm	: 6.26
Tolerance mm	: ± 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 550
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 226.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

##### RATED SPEED

control lever	
position degree	: 97.0
tolerance degree	: ± 4.0
rack travel mm	: 13.00
Rated speed rpm	: 998
Tolerance 1/min	: ± 8
rack travel mm	: 4.00
Rated speed rpm	: 1080
Tolerance 1/min	: ± 15
rack travel mm	: 0.75

Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm : + 0.10

Rated speed rpm : 870  
rack travel mm : 14.30  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm : + 0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm : + 0.10

---

#### START CUT-OUT

Rated speed rpm : > 220  
Check  
speed 1/min : > 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.08.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 946  
  
Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886  
  
Governor  
Governor design. : RQ300/1050PA1031-15  
Governor no. : 0 421 801 721

Cust. part No. : 0230747902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm3/1000S. : + 4.0

---

Spread  
Tolerance  
cm3/1000 strokes : 6.0

---

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread  
Tolerance

cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.75  
Tolerance mm : + 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.64  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 790  
guide sleeve  
travel mm : 6.08  
Tolerance mm : + 0.10

Rated speed rpm : 407  
guide sleeve  
travel mm : 4.27  
Tolerance mm : + 0.10

Rated speed rpm : 510

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1270  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 844  
guide sleeve  
travel mm : 6.23  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm3/1000 strokes : 226.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0  
Spread  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.10

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400  
Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.95  
Test oil : ISO 4113  
Combination No. : 0 402 648 964  
Injection pump  
Pump designation : PE8P120A920/4LS7266  
: -1  
EP type number : 0 412 628 898  
Governor  
Governor design. : RQ1050PA758-19  
Governor no. : 0 421 801 688

Cust. part No. : 1340531

Customer-spec. information  
Customer : SCANIA  
Motor : D 14

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration  
damper  
(RoBo diaphragm) : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.50

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4  
: - 5- 6- 8

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 30.0

tolerance degree : ± 4.0

control lever  
position degree : 92.0  
tolerance degree : ± 4.0

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.45  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 220  
rack travel mm : 12.00  
Tolerance mm : ± 0.20

Pressure hPa : 510  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.00  
Tolerance mm : ± 0.20

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

End of test specification sheet



Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 26.0

tolerance degree : ± 4.0

control lever  
position degree : 87.0  
tolerance degree : ± 4.0

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.95  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 220  
rack travel mm : 12.00  
Tolerance mm : ± 0.20

Pressure hPa : 510  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.00  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.95  
Test oil : ISO 4113

Combination No. : 0 402 648 974

Injection pump  
Pump designation : PE8P120A320LS7875  
EP type number : 0 412 628 881

Governor  
Governor design. : RQ250/1150PA1122  
Governor no. : 0 421 801 704

Cust. part No. :

Customer spec. information  
Customer : DAEWOO  
Motor : V2-8TC

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.20  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 16.00  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.10

Rated speed rpm : 1207  
guide sleeve  
travel mm : 6.36  
Tolerance mm : + 0.10

Rated speed rpm : 650  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 382  
guide sleeve  
travel mm : 5.26  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1370

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

##### RATED SPEED

control lever  
position degree : 34.0  
tolerance degree : + 4.0

control lever  
position degree : 95.0  
tolerance degree : + 4.0

rack travel mm : 12.60  
Rated speed rpm : 1202  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 75.0



tolerance degree : + 4.0

control lever  
position degree : 14.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 9.20

#### TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 13.60  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.60  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.00  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 650  
rack travel mm : 12.50  
Tolerance mm : + 0.20

Pressure hPa : 250  
rack travel mm : 10.00  
Tolerance mm : + 0.05

#### START CUT-OUT

Rated speed rpm : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

#### BREAKAWAY

Rack travel in mm : 12.60  
Rated speed rpm : 1202  
Tolerance 1/min : + 8

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 10.04.95  
Test oil : ISO 4113

Combination No. : 0 402 648 982

Injection pump  
Pump designation : FE8P120A320LS7884  
EP type number : 0 412 628 900

Governor  
Governor design. : RQV350...1200PA1197  
Governor no. : 0 421 814 116

Cust. part No. : 0250744102

Customer-spec. information  
Customer : MTU  
Motor : 8V-183-03  
Power KW : 564.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 9.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 3.80  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : + 0.20

Rated speed rpm : 1255  
guide sleeve  
travel mm : 8.31  
Tolerance mm : + 0.15

Rated speed rpm : 1000  
guide sleeve  
travel mm : 5.83  
Tolerance mm : + 0.25

Rated speed rpm : 407  
guide sleeve  
travel mm : 2.57  
Tolerance mm : + 0.25

Rated speed rpm : 457  
guide sleeve  
travel mm : 3.13  
Tolerance mm : + 0.25

Rated speed rpm : 610

guide sleeve  
travel mm : 3.65  
Tolerance mm : + 0.25

Rated speed rpm : 1360  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1470  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1320

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : + 4.0

rack travel mm : 12.70  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1345  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

## LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  5.30

Rated speed rpm : 450

---

## TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1200  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 500  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 250  
rack travel mm : 7.30  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1400  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1000  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 334.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 389.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

## BREAKAWAY

Rack travel in mm : 12.70

Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 415.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.08.95  
Test oil : ISO 4113

Combination No. : 0 402 666 800

Injection pump  
Pump designation : PE6P120A320/3LS7854  
: -2  
EP type number : 0 412 626 935

Governor  
Governor design. : RSV600...1050POA826  
: -7  
Governor no. : 0 421 833 453

Cust. part No. : 0240747002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 441 LA  
Power KW : 265.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

K24

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 14.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 500

Rack travel in mm : 3.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 87.0  
tolerance degree : ± 4.0

##### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 600  
rack travel mm : 3.70  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 14.50  
Tolerance mm : ± 0.10

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -



Rated speed rpm : 600  
Del. quantity  
cm3/1000 strokes : 271.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 250.0  
Tolerance  
cm3/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm3/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 600  
rack travel mm : 3.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm3/1000 strokes : 17.0  
Tolerance  
cm3/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.08.95  
Test oil : ISO 4113  
Combination No. : 0 402 735 805  
Injection pump  
Pump designation : PES5P120A720/3LS7250  
EP type number : 0 412 725 809

Governor  
Governor design. : RQV325...1000PA962  
: -6K  
Governor no. : 0 421 815 301

Cust. part No. : 3-7202

Customer-spec. information  
Customer : MAN  
Motor : D2865LF06/LU06  
Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 900

---

Rack travel in mm : 12.45  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 3.30  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1055  
guide sleeve  
travel mm : 8.92  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 810  
guide sleeve  
travel mm : 6.08  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 352  
guide sleeve  
travel mm : 3.13  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 402  
guide sleeve  
travel mm : 3.98  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 4.42  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1198  
guide sleeve  
travel mm : 12.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1290  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1180

Rack travel in mm : 11.20  
Tolerance mm :  $\pm$  2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

##### RATED SPEED

control lever  
position degree : 292.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 246.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.50

Rated speed rpm : 395

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900

Pressure hPa : 600  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 170  
rack travel mm : 8.75  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  290  
Check  
speed 1/min :  $<$  310

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 246.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 809

Injection pump  
Pump designation : PES5P120A720/3LS7310  
EP type number : 0 412 725 817

Governor  
Governor design. : RQ325/1000PA1106  
Governor no. : 0 421 801 698

Cust. part No. : 51.11103-7302

Customer-spec. information  
Customer : MAN  
Motor : D 2865 LUH 05  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.80  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.70  
Tolerance mm : + 0.10

Rated speed rpm : 1059  
guide sleeve  
travel mm : 7.62  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.30  
Tolerance mm : + 0.10

Rated speed rpm : 769  
guide sleeve  
travel mm : 7.08  
Tolerance mm : + 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.44  
Tolerance mm : + 0.10

Rated speed rpm : 530

guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 802  
guide sleeve  
travel mm : 7.23  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 103.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.50

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 250

L05

rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 1100  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1350  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.15

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY



Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 812

Injection pump  
Pump designation : PES5P120A720/3LS7250  
: -1

EP type number : 0 412 725 819

Governor  
Governor design. : RQV325...1000PA962  
: -6K

Governor no. : 0 421 815 301

Cust. part No. : 51.11103-7323

## Customer-spec. information

Customer : MAN  
Motor : D2865LF06/LU06  
Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

L07

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 900

---

Rack travel in mm : 12.30  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

L08

guide sleeve  
travel mm : 2.42  
Tolerance mm : + 0.25

Rated speed rpm : 1055  
guide sleeve  
travel mm : 8.93  
Tolerance mm : + 0.25

Rated speed rpm : 810  
guide sleeve  
travel mm : 6.08  
Tolerance mm : + 0.25

Rated speed rpm : 352  
guide sleeve  
travel mm : 3.13  
Tolerance mm : + 0.25

Rated speed rpm : 402  
guide sleeve  
travel mm : 3.98  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 4.42  
Tolerance mm : + 0.25

Rated speed rpm : 1198  
guide sleeve  
travel mm : 12.00  
Tolerance mm : + 0.25

Rated speed rpm : 1290  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1180

Rack travel in mm : 11.20  
Tolerance mm : + 2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

#### RATED SPEED

control lever  
position degree : 292.0  
tolerance degree : ± 4.0

rack travel mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 246.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 395

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.30  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 400  
rack travel mm : 11.25  
Tolerance mm : ± 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING \*

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 12.30  
Tolerance mm : ± 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 900

Pressure hPa : 170  
rack travel mm : 8.75  
Tolerance mm : ± 0.05

Pressure hPa : 600  
rack travel mm : 11.45  
Tolerance mm : ± 0.15

---

#### START CUT-OUT

Rated speed rpm : < 290  
Check  
speed 1/min : < 310

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 268.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 813

Injection pump  
Pump designation : PES5P120A720/3LS7250  
: -1  
EP type number : 0 412 725 819

Governor  
Governor design. : RQV325...1000PA960  
: -9K  
Governor no. : 0 421 815 309

Cust. part No. : 51.11103-7339

## Customer-spec. information

Customer : MAN  
Motor : D2865LF06/LU06  
Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

L11

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 900

Rack travel in mm : 12.30  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 325

Rack travel in mm : 5.00  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve  
travel mm : 2.66  
Tolerance mm : + 0.25

Rated speed rpm : 1058  
guide sleeve  
travel mm : 10.58  
Tolerance mm : + 0.25

Rated speed rpm : 741  
guide sleeve  
travel mm : 6.99  
Tolerance mm : + 0.25

Rated speed rpm : 260  
guide sleeve  
travel mm : 2.01  
Tolerance mm : + 0.25

Rated speed rpm : 310  
guide sleeve  
travel mm : 2.58  
Tolerance mm : + 0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 3.71  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

#### GUIDE SLEEVE POSITION

Rated speed rpm : 1115  
Rack travel in mm : 11.10  
Tolerance mm : + 2.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

## RATED SPEED

control lever  
position degree : 297.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.10  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 252.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 225

CRT mm min. :  $>$  6.50

Rated speed rpm : 305

---

## TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.15

---

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900

Pressure hPa : 170  
rack travel mm : 8.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 600  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.15

---

### START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 268.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---



Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.10  
Rated speed rpm : 1045  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 815

Injection pump  
Pump designation : PES5P120A720/3LS7310  
: -1  
EP type number : 0 412 725 820

Governor  
Governor design. : RQ325/1000PA1106  
Governor no. : 0 421 801 698

Cust. part No. : 51.11103-7350

Customer-spec. information  
Customer : MAN  
Motor : D 2865 LUH 05  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.80  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.49  
Tolerance mm : + 0.10

Rated speed rpm : 1059  
guide sleeve  
travel mm : 7.34  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.01  
Tolerance mm : + 0.10

Rated speed rpm : 777  
guide sleeve  
travel mm : 7.01  
Tolerance mm : + 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.24  
Tolerance mm : + 0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 103.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.50

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600

rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 1100  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1350  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.15

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 817

Injection pump  
Pump designation : PES5P120A720/3LS7310  
: -1  
EP type number : 0 412 725 820

Governor  
Governor design. : RQ325/1000PA1229  
Governor no. : 0 421 801 786

Cust. part No. : 51.11103-7409

## Customer-spec. information

Customer : MAN  
Motor : D2865LUH05/MANAS  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.68  
Tolerance mm : + 0.10

Rated speed rpm : 1060  
guide sleeve  
travel mm : 7.61  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.30  
Tolerance mm : + 0.10

Rated speed rpm : 769  
guide sleeve  
travel mm : 7.08  
Tolerance mm : + 0.10

Rated speed rpm : 399  
guide sleeve  
travel mm : 4.42  
Tolerance mm : + 0.10

Rated speed rpm : 530

guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 803  
guide sleeve  
travel mm : 7.23  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 282.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 253.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  6.60

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500

Pressure hPa : 250

rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 1100  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1350  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.15

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY



Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.95  
Test oil : ISO 4113

Combination No. : 0 402 735 818

Injection pump  
Pump designation : PES5P120A720/3LS7310  
: -1  
EP type number : 0 412 725 820

Governor  
Governor design. : RQ325/1000PA1228  
Governor no. : 0 421 801 789

Cust. part No. : 51.11103-7337

Customer-spec. information  
Customer : MAN  
Motor : D 2865 LOH 05  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 115  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

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Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.68  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1060  
guide sleeve  
travel mm : 7.62  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 771  
guide sleeve  
travel mm : 7.08  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
guide sleeve  
travel mm : 4.41  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 530

guide sleeve  
travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1210  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 804  
guide sleeve  
travel mm : 7.23  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm :  $\pm$  0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 281.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.70  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1250

---

## LOW IDLE

control lever  
position degree : 253.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  6.60

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500

Pressure hPa : 250

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rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 1200  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1400  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.15

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 257.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1053  
Tolerance 1/min :  $\pm$  8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.07.95  
Test oil : ISO 4113  
Combination No. : 0 402 736 859  
Injection pump  
Pump designation : PES6P120A120RS7261  
EP type number : 0 412 726 876  
Governor  
Governor design. : RQV350...1100PA924  
: -10K  
Governor no. : 0 421 815 429  
Cust. part No. : 3282465

Customer spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 176.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

L27

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery blocking  
°NW after s.o.d. : 7.00  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 10.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Speed Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 9.0
Rated speed rpm	: 350
Rack travel in mm	: 5.10
Tolerance mm	: + 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	: 26.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance cm <sup>3</sup> /1000S.	: + 5.0
Speed Tolerance cm <sup>3</sup> /1000 strokes	: 7.0
Check tolerance cm <sup>3</sup> /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 1400
Rack travel in mm	: 9.00
Tolerance mm	: + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure hPa	: 900
Del. quantity cm <sup>3</sup> /1000 strokes	: 145.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Speed Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

RATED SPEED

control lever position degree	: 113.0
tolerance degree	: + 4.0
rack travel mm	: 9.80
Rated speed rpm	: 1145
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever position degree	: 68.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm	: 350
rack travel mm	: 5.10
Tolerance mm	: + 0.10
Rated speed rpm	: 250
CRT mm min.	: > 6.60
Rated speed rpm	: 400

TORQUE CONTROL

Rated speed rpm	: 1100
rack travel mm	: 10.85
Tolerance mm	: + 0.05
Rated speed rpm	: 700
rack travel mm	: 10.00
Tolerance mm	: + 0.10
Rated speed rpm	: 900
rack travel mm	: 10.35
Tolerance mm	: + 0.15
Rated speed rpm	: 400
rack travel mm	: 9.15
Tolerance mm	: + 0.15

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 1100  
Pressure hPa : 900  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 7.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100

Pressure hPa : 320  
rack travel mm : 8.50  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 560  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.05

---

## START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

MO1

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 9.80  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

## LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.07.95  
Test oil : ISO 4113

Combination No. : 0 402 736 861

Injection pump  
Pump designation : PES6P120A120RS7261  
EP type number : 0 412 726 876

Governor  
Governor design. : RQV350...1100PA924  
: -11K  
Governor no. : 0 421 815 431

Cust. part No. : 3282468

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 202.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

M02

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance \*NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 7.00

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1400

Rack travel in mm : 9.00  
Tolerance mm : + 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 57.0

M03

tolerance degree : + 4.0

control lever  
position degree : 115.0  
tolerance degree : + 4.0

rack travel mm : 11.00  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1275  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 17.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 350  
rack travel mm : 4.90  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.30

Rated speed rpm : 400

---

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 11.30  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 11.55  
Tolerance mm : + 0.15

Rated speed rpm : 500  
rack travel mm : 10.55  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1200  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 7.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100

Pressure hPa : 320  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 700  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.05

---

START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 11.00  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.08.95  
Test oil : ISO 4113

Combination No. : 0 402 736 888

Injection pump  
Pump designation : PES6P120A120RS7390  
EP type number : 0 412 726 945

Governor  
Governor design. : RQV350...1100PA1237K  
Governor no. : 0 421 815 475

Cust. part No. : 3282740

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 162.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 90  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.90  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 10.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.60

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.27  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.79  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 4.28  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1200  
Rack travel in mm : 11.60  
Tolerance mm :  $\pm$  1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 123.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.60  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 21.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  7.70

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1100

M07

Pressure hPa : 170  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 330  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  280  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 736 890  
  
Injection pump  
Pump designation : PES6P120A120RS7314  
EP type number : 0 412 726 901  
  
Governor  
Governor design. : RQV400...1250PA964  
                  : -32K  
Governor no. : 0 421 815 486  
  
Cust. part No. : 3282607

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA  
Power KW : 158.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 086  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.70  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 5.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 14.60  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 6.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 400  
guide sleeve  
travel mm : 1.39  
Tolerance mm : ± 0.20

Rated speed rpm : 1314  
guide sleeve  
travel mm : 7.65  
Tolerance mm : ± 0.15

Rated speed rpm : 864  
guide sleeve  
travel mm : 4.76  
Tolerance mm : ± 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.33  
Tolerance mm : ± 0.25

Rated speed rpm : 1700

guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 13.60  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

rack travel mm : 13.60  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1480  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

##### LOW IDLE

control lever  
position degree : 73.0

tolerance degree : + 4.0

control lever  
position degree : 16.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 300  
CRT mm min. : > 8.50

Rated speed rpm : 430

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.60  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 12.25  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1500  
rack travel mm : 14.60  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : 11.10  
Tolerance mm : + 0.10

Rated speed rpm : 1250

Pressure hPa : 275  
rack travel mm : 11.90  
Tolerance mm : + 0.20

Pressure hPa : 485  
rack travel mm : 13.80

Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 320  
Check  
speed 1/min : < 360

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 13.60  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

LOW IDLE

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.08.95  
Test oil : ISO 4113

Combination No. : 0 402 744 804

Injection pump  
Pump designation : PES4P120A320RS7402  
EP type number : 0 412 724 804

Governor  
Governor design. : RQV275...1300PA1257K  
Governor no. : 0 421 815 494

Cust. part No. : CCEP 5154 66-238

## Customer-spec. information

Customer : RVI  
Motor : MIDR 04-02-26 A4  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.20  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm3/1000S. : 9.0  
 Rated speed rpm : 325  
 Rack travel in mm : -8.80  
 Tolerance mm :  $\pm$  0.20  
 Del. quantity  
 cm3/1000 strokes : 28.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.52  
 Tolerance mm :  $\pm$  0.20  
 Rated speed rpm : 1377  
 guide sleeve  
 travel mm : 10.32  
 Tolerance mm :  $\pm$  0.15  
 Rated speed rpm : 938  
 guide sleeve  
 travel mm : 6.86  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 550  
 guide sleeve  
 travel mm : 3.92  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1650  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1464  
 Rack travel in mm : 13.10  
 Tolerance mm :  $\pm$  1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm3/1000 strokes : 245.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 300.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1365  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : -10.10  
 Rated speed rpm : 1495  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : -14.05  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever  
 position degree : 252.0  
 tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 325  
 rack travel mm : -8.80  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 225  
 CRT mm min. : > 6.54  
 Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 850  
rack travel mm : -1.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1300  
rack travel mm : -0.45  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 700  
rack travel mm : -6.00  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1200  
Pressure hPa : 1200

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1200  
rack travel mm : -2.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1200

Pressure hPa : 200  
rack travel mm : -1.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 440  
rack travel mm : -0.70  
Tolerance mm :  $\pm$  0.05

---

##### START CUT-OUT

Rated speed rpm : < 275  
Check  
speed 1/min : < 285

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  6.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

##### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1365  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

##### LOW IDLE

Rated speed rpm : 325  
rack travel mm : -8.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.08.95  
Test oil : ISO 4113

Combination No. : 0 402 746 645

Injection pump  
Pump designation : PES6P120A320RS7364  
EP type number : 0 412 726 930

Governor  
Governor design. : RQV300...1050PA1204  
Governor no. : 0 421 814 123

Cust. part No. : CCEP 5148 66-236

## Customer-spec. information

Customer : RVI  
Motor : MIDR 06.20.45D41  
Power KW : 217.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0



Check tolerance cm <sup>3</sup> /1000S.	:	9.0
Rated speed rpm	:	300
Rack travel in mm	:	-7.30
Tolerance mm	:	+ 0.20
Del. quantity cm <sup>3</sup> /1000 strokes	:	25.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 5.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance cm <sup>3</sup> /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	1.33
Tolerance mm	:	+ 0.25
Rated speed rpm	:	1135
guide sleeve travel mm	:	8.45
Tolerance mm	:	+ 0.25
Rated speed rpm	:	752
guide sleeve travel mm	:	6.09
Tolerance mm	:	+ 0.25
Rated speed rpm	:	365
guide sleeve travel mm	:	2.40
Tolerance mm	:	+ 0.25
Rated speed rpm	:	415
guide sleeve travel mm	:	3.28
Tolerance mm	:	+ 0.25
Rated speed rpm	:	460
guide sleeve travel mm	:	3.86
Tolerance mm	:	+ 0.25
Rated speed rpm	:	1460
guide sleeve travel mm	:	11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	:	1230
Rack travel in mm	:	11.70
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	600
Aneroid pressure hPa	:	1000
Del. quantity cm <sup>3</sup> /1000 strokes	:	278.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever position degree	:	302.0
tolerance degree	:	+ 4.0
rack travel mm	:	-1.00
Rated speed rpm	:	1120
Tolerance 1/min	:	+ 5
rack travel mm	:	-9.60
Rated speed rpm	:	1290
Tolerance 1/min	:	+ 15
rack travel mm	:	-13.10
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1400

LOW IDLE

control lever position degree	:	267.0
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	200
-----------------	---	-----

CRT mm max. : < -4.80  
Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Rated speed rpm : 1050  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.10  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -1.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 400  
rack travel mm : -0.50  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 230  
Check  
speed 1/min : < 250

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -7.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.95  
Test oil : ISO 4113

Combination No. : 0 402 746 649

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 925

Governor  
Governor design. : RQ275/1050PA1217  
Governor no. : 0 421 801 782

Cust. part No. : CCEP 5150 66  
: -225/228

## Customer-spec. information

Customer : RVI  
Motor : MIDRO62045 I-B41  
Power KW : 185.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 220  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

M20

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.10  
Tolerance mm : + 0.20

Del. quantity  
cm3/1000 strokes : 33.0

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 5.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.37  
Tolerance mm : + 0.10

Rated speed rpm : 1137  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 391  
guide sleeve  
travel mm : 4.37  
Tolerance mm : + 0.10

Rated speed rpm : 490  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1340

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1000

Del. quantity  
cm3/1000 strokes : 194.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

RATED SPEED

control lever  
position degree : 274.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 5

rack travel mm : -8.55  
Rated speed rpm : 1245  
Tolerance 1/min : + 15

rack travel mm : -12.10  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 252.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -6.10  
Tolerance mm : + 0.10

rack travel mm : -10.50  
Rated speed rpm : 385  
Tolerance 1/min : + 20

Rated speed rpm : 200  
CRT mm min. : < -4.90

---

#### TORQUE CONTROL

Rated speed rpm : 700  
Rated speed rpm : 1050  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -1.50  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : -0.95  
Tolerance mm : + 0.15

Pressure hPa : 240  
rack travel mm : -0.60  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 195  
Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050

Del. quantity  
cm3/1000 strokes : 197.5  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 148.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 165.0  
Tolerance  
cm3/1000 strokes : + 15.0  
Check tolerance  
cm3/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -6.10  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 33.0  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.95  
Test oil : ISO 4113

Combination No. : 0 402 746 894

Injection pump  
Pump designation : FES6P110A32ORS7208  
EP type number : 0 412 716 803

Governor  
Governor design. : RQV275...1175PA942  
: -1K  
Governor no. : 0 421 815 244

Cust. part No. : CCEP 5100A

## Customer-spec. information

Customer : RVI  
Motor : MIDR060226 M  
Power KW : 210.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1175

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.00  
Tolerance mm : + 0.25

Rated speed rpm : 1256  
guide sleeve  
travel mm : 9.17  
Tolerance mm : + 0.25

Rated speed rpm : 888  
guide sleeve  
travel mm : 6.57  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : + 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.01  
Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.92  
Tolerance mm : + 0.25

Rated speed rpm : 1650

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1400

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

RATED SPEED

control lever  
position degree : 114.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

rack travel mm : -10.05  
Rated speed rpm : 1430  
Tolerance 1/min : + 15

rack travel mm : -13.55  
Tolerance mm : + 0.55  
Rated speed rpm : 1600

LOW IDLE

control lever  
position degree : 60.0  
tolerance degree : + 4.0

Testing:



Rated speed rpm : 275  
rack travel mm : -8.80  
Tolerance mm : + 0.20

Rated speed rpm : 200  
CRT mm max. : < -8.20  
Rated speed rpm : 415

---

#### TORQUE CONTROL

Rated speed rpm : 1175  
  
Rated speed rpm : 700  
rack travel mm : -0.70  
Tolerance mm : + 0.10  
  
Rated speed rpm : 700  
rack travel mm : -6.05  
Tolerance mm : + 0.10  
  
Rated speed rpm : 800  
rack travel mm : -0.35  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1175  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1175  
rack travel mm : -3.30  
Tolerance mm : + 0.20  
  
Rated speed rpm : 1175  
  
Pressure hPa : 240  
rack travel mm : -2.70  
Tolerance mm : + 0.20  
  
Pressure hPa : 520  
rack travel mm : -1.45  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check  
speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 3.5

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 19.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 402 746 909

Injection pump  
Pump designation : FES6P120A320RS7236  
EP type number : 0 412 726 848

Governor  
Governor design. : RQV275...1000PA1001  
: -1  
Governor no. : 0 421 813 936

Cust. part No. : CCEP 5116A PROJ.171

## Customer spec. information

Customer : RVI  
Motor : MIDR 063540 J/3  
Power KW : 306.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 039

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Del. quantity  
cm3/1000 strokes : 310.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.60  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

NO1

control lever  
position degree : 302.0  
tolerance degree : ± 4.0

rack travel mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : ± 5

rack travel mm : -9.70  
Rated speed rpm : 1210  
Tolerance 1/min : ± 15

rack travel mm : -13.25  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

---

##### LOW IDLE

control lever  
position degree : 246.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm max. : < -7.20

Rated speed rpm : 370

---

##### TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : -5.50  
Tolerance mm : ± 0.10

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.00  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -3.80  
Tolerance mm : + 0.20

Pressure hPa : 600  
rack travel mm : -0.95  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 402 746 931

Injection pump  
Pump designation : PES6P120A320RS7236  
EP type number : 0 412 726 848

Governor  
Governor design. : RQV275...1000PA1001  
: -2  
Governor no. : 0 421 813 989

Cust. part No. : CCEP5128A 66-194

## Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 N/3  
Power KW : 283.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 19.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : -8.20

Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 13.20

Tolerance mm : + 1.30

NO4

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Ar<sub>0</sub> pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 301.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

rack travel mm : -9.30  
Rated speed rpm : 1205  
Tolerance 1/min : + 15

rack travel mm : -12.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

#### LOW IDLE

control lever  
position degree : 247.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -8.20  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.80

Rated speed rpm : 365

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Rated speed rpm : 1000  
Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 600  
rack travel mm : -4.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.80  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -2.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 480  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.05

---

##### START CUT-OUT

Rated speed rpm : < 195  
Check  
speed 1/min : < 215

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

##### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.20  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed



Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 04.09.95  
Test oil : ISO 4113

Combination No. : 0 402 846 054

Injection pump  
Pump designation : FE6P120A320RS8017  
EP type number : 0 412 826 018

Governor  
Governor design. : RQV300...1100PA1017  
: -1  
Governor no. : 0 421 814 023

Cust. part No. : 865811-P02 v. 06/93

Customer-spec. information  
Customer : PENTA  
Motor : TWD 1030 ME  
Power KW : 212.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 300  
 Rack travel in mm : 4.30  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.19  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1137  
 guide sleeve  
 travel mm : 8.19  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 816  
 guide sleeve  
 travel mm : 5.27  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 385  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 435  
 guide sleeve  
 travel mm : 2.45  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 530  
 guide sleeve  
 travel mm : 3.11  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1400  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250  
 Rack travel in mm : 10.00  
 Tolerance mm :  $\pm$  2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

RATED SPEED

control lever  
 position degree : 58.0  
 tolerance degree :  $\pm$  4.0

control lever  
 position degree : 114.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 10.05  
 Rated speed rpm : 1125  
 Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
 Rated speed rpm : 1210  
 Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1320

LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree :  $\pm$  4.0

control lever  
 position degree : 15.0  
 tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 200

CRT mm min. :  $>$  6.00

Rated speed rpm : 330

---

### TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.05

---

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 780  
rack travel mm : 2.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

### BREAKAWAY

Rack travel in mm : 10.05  
Rated speed rpm : 1125  
Tolerance 1/min :  $\pm$  5

---

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95  
Test oil : ISO 4113

Combination No. : 0 402 846 064

Injection pump  
Pump designation : PE6P120A320RS8030  
EP type number : 0 412 826 030

Governor  
Governor design. : RQV300...1100PA1017  
: -2  
Governor no. : 0 421 814 102

Cust. part No. : 3825107-P03

Customer-spec. information  
Customer : PENTA  
Motor : TWD 1230 ME  
Power KW : 275.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000s. : 11.0

Del. quantity  
cm3/1000 strokes : 20.0  
Tolerance  
cm3/1000 strokes : + 2.5  
Check tolerance  
cm3/1000S. : + 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.41  
Tolerance mm : + 0.25

Rated speed rpm : 1182  
guide sleeve  
travel mm : 8.71  
Tolerance mm : + 0.25

Rated speed rpm : 834  
guide sleeve  
travel mm : 5.40  
Tolerance mm : + 0.25

Rated speed rpm : 385  
guide sleeve  
travel mm : 1.98  
Tolerance mm : + 0.25

Rated speed rpm : 435  
guide sleeve  
travel mm : 2.45  
Tolerance mm : + 0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.11  
Tolerance mm : + 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 9.00  
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm3/1000 strokes : 275.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0  
Speed  
Tolerance  
cm3/1000 strokes : 7.0  
Check tolerance  
cm3/1000S. : 11.0

RATED SPEED

control lever  
position degree : 46.0  
tolerance degree : + 4.0

control lever  
position degree : 112.0  
tolerance degree : + 4.0

rack travel mm : 10.80  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

control lever  
position degree : 12.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 225  
CRT mm min. :  $>$  7.20  
Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 980  
rack travel mm : 3.30  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 380  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 161.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 1070  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  21.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.09.95  
Test oil : ISO 4113

Combination No. : 0 402 846 070

Injection pump  
Pump designation : FE6P120A320RS8040  
EP type number : 0 412 826 034

Governor  
Governor design. : RQV300...1050PA1247  
Governor no. : 0 421 814 163

Cust. part No. : 11031221  
: -P02v 030895

Customer-spec. information  
Customer : VME  
Motor : TD 103 KCE  
Power KW : 186.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 165  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

N13

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0



---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 320

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 320  
guide sleeve  
travel mm : 1.34  
Tolerance mm : + 0.20

Rated speed rpm : 1112  
guide sleeve  
travel mm : 7.91  
Tolerance mm : + 0.15

Rated speed rpm : 806  
guide sleeve  
travel mm : 5.20  
Tolerance mm : + 0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.11  
Tolerance mm : + 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 11.50

Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 11.00  
Tolerance mm : + 2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

##### RATED SPEED

control lever  
position degree : 45.0  
tolerance degree : + 4.0

control lever  
position degree : 112.0  
tolerance degree : + 4.0

rack travel mm : 9.80  
Rated speed rpm : 1100  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

##### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : + 4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 320  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 220  
CRT mm min. :  $>$  7.80

Rated speed rpm : 380

---

#### TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 720  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 840  
rack travel mm : 2.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 230  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 9.80  
Rated speed rpm : 1100  
Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Rated speed rpm : 320  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 946 012  
Injection pump  
Pump designation : FES6P120A320RS8031  
EP type number : 0 412 926 022  
Governor  
Governor design. : RQV300...1000PA1181K  
Governor no. : 0 421 815 975

Cust. part No. : CCEP 5145A 66-234

Customer-spec. information  
Customer : RVI  
Motor : MIDR 063540 P 41  
Power KW : 300.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 078  
Inlet press. bar : 2.5  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 19.50  
Difference ° CS : 2.75

## BASIC SETTING

Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 356.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.00  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.47  
Tolerance mm : + 0.25

Rated speed rpm : 1082  
guide sleeve  
travel mm : 9.30  
Tolerance mm : + 0.25

Rated speed rpm : 797  
guide sleeve  
travel mm : 6.08  
Tolerance mm : + 0.25

Rated speed rpm : 383  
guide sleeve  
travel mm : 2.42  
Tolerance mm : + 0.25

Rated speed rpm : 433  
guide sleeve  
travel mm : 2.89  
Tolerance mm : + 0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.71  
Tolerance mm : + 0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 12.00  
Tolerance mm : + 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 356.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 295.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1065  
Tolerance 1/min : + 5

rack travel mm : -9.20  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : -12.90  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 253.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : -8.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. :  $<$  -6.20

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600  
rack travel mm : -0.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : -0.35  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 350  
rack travel mm : -1.80  
Tolerance mm :  $\pm$  0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1100  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -4.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1000

Pressure hPa : 280  
rack travel mm : -3.70  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 560  
rack travel mm : -2.30

Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  240  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 386.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1065  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 325

rack travel mm : -8.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.95  
Test oil : ISO 4113

Combination No. : 0 402 946 014

Injection pump  
Pump designation : PES6P120A720LS8037  
EP type number : 0 412 926 024

Governor  
Governor design. : RQV250...1050PA1236K  
Governor no. : 0 421 815 970

Cust. part No. : 1370101

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1202

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.00  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 775

Rack travel in mm : 14.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 330.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0



Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

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Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.60  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

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GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.79  
Tolerance mm : + 0.20

Rated speed rpm : 1116  
guide sleeve  
travel mm : 10.09  
Tolerance mm : + 0.15

Rated speed rpm : 644  
guide sleeve  
travel mm : 4.47  
Tolerance mm : + 0.25

Rated speed rpm : 290  
guide sleeve  
travel mm : 2.62  
Tolerance mm : + 0.25

Rated speed rpm : 1310  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

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GUIDE SLEEVE POSITION

Rated speed rpm : 1170

Rack travel in mm : 12.10  
Tolerance mm : + 1.30

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 775  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 330.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

control lever  
position degree : 63.0  
tolerance degree : + 4.0

control lever  
position degree : 121.0  
tolerance degree : + 4.0

rack travel mm : 12.10  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

control lever  
position degree : 20.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 150

CRT mm min. :  $>$  7.30

Rated speed rpm : 275

### TORQUE CONTROL

Rated speed rpm : 775  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.30

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 775  
Pressure hPa : 1500  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 775  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 775

Pressure hPa : 300  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 610  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

### START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 319.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 192.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

### BREAKAWAY

Rack travel in mm : 12.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113  
Combination No. : 0 402 946 017  
Injection pump  
Pump designation : PE6P120A720RS8039  
EP type number : 0 412 926 026  
Governor  
Governor design. : RQV250...950PA1243  
Governor no. : 0 421 814 162

Cust. part No. : 1374808

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11.79

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 5.40  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

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##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.02  
Tolerance mm : ± 0.20

Rated speed rpm : 1008  
guide sleeve  
travel mm : 8.27  
Tolerance mm : ± 0.15

Rated speed rpm : 733  
guide sleeve  
travel mm : 6.04  
Tolerance mm : ± 0.25

Rated speed rpm : 470  
guide sleeve  
travel mm : 3.78  
Tolerance mm : ± 0.25

Rated speed rpm : 1290  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

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##### GUIDE SLEEVE POSITION

Rated speed rpm : 1125

Rack travel in mm : 10.90  
Tolerance mm : ± 1.30

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##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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##### RATED SPEED

control lever  
position degree : 51.0  
tolerance degree : ± 4.0

control lever  
position degree : 115.0  
tolerance degree : ± 4.0

rack travel mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

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##### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

control lever  
position degree : 17.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150  
CRT mm min. :  $>$  8.10  
Rated speed rpm : 300

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#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.05

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.05

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#### START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet